The Newspaper of Information Systems Management
October 2, 1995, Vol. 29, No. 40, 142 Pages, $6/Copy, $48/Year

# COMPUTERWORLD

## PC platforms emerge to manage net tasks

By Patrick Dryden
ATLANTA

To the relief of many network administrators, PC platforms capable of managing enterprise environments surfaced last week at Networld/Interop '95. Especially in evidence were systems based on Microsoft Corp.'s Windows NT, the current darling of organizations seeking a cheaper, more familiar platform than Unix.

A Windows PC provides a comfort zone that helps fledgling network managers start out on familiar footing, said Tom Henderson, engineering vice president at Indianapolis-based integrator Unitel, Inc.

"My clients shouldn't require a bachelor's degree in a management product backed by expertise in programming, protocols, design and infrastructure," Henderson said.

All of the major enterprise network management developers are revamping their platforms to handle larger and more distributed networks. But they are also heeding the plea

**PC platforms,** *page 14*




**Boys just wanna have fun:** *Comedian Joe Piscopo (right) graciously but vocally loses an arm-wrestling bout with Cabletron President Bob Levine last week at Atlanta's Hard Rock Cafe*

### Inside


- Longtime Cisco customers blast the internetworking giant for its latest acquisition bid. **See story, page 2, by Bob Wallace.**
- Novell lays out its latest corporate strategy and product road map. **See story, page 4, by Laura DiDio.**
- Novell also spells out how it will integrate Unix functionality into NetWare. **See story, page 4, by Jean S. Bozman.**
- Networld/Interop turns the spotlight on a host of new, low-cost Ethernet and Token Ring LAN switches. **See story, page 14, by Bob Wallace.**


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## Object standoff

### Microsoft/OMG rift leaves users to sort out competing standards

By Frank Hayes

While denying rumors that it is about to bail out of the Object Management Group, Microsoft Corp. last week finally acknowledged that it has no intention of adopting the OMG standards but will stick with its own object technology exclusively.

The software giant's increased activity in the OMG during the past year had been widely interpreted as a sign Microsoft was willing to concentrate on the low end while the OMG standards would rule at the high end of the enterprise.

But Jeff Alger, senior product manager in the enterprise developer group at Microsoft, dispelled that notion. "Our agenda is to make OLE a very credible, viable, cross-platform object model," he said. "Our interest [in the OMG] is in making sure there's a standardized way for systems from other vendors to interoperate with OLE." The OLE technology is Microsoft's proprietary approach to integrating applications and software components.

**What Microsoft will and won't do with OLE technology**

| Will | Won't |
|---|---|
| • Participate in OMG | • Adopt OMG's CORBA standard |
| • License OLE to third-party vendors | • Port OLE to other vendors' platforms but will encourage certain partners to do so |
| • Publish Network OLE spec later this month | |

For corporate users and developers, the result is a double-edged sword. They will have to choose between two incompatible object technologies for enterprise applications or rely on

**Object standoff,** *page 131*

## Apple wants IBM muscle

### But IBM denies any plans to switch from OS/2 to Mac

By Lisa Picarille

IBM and Apple Computer, Inc. may be partners on a number of projects, but the two can't seem to agree on much when it comes to desktop operating systems.

The latest hot potato concerns the future of IBM's desktop operating system.

In an interview in last week's *Wall Street Journal*, normally tight-lipped Apple Chairman A. C. "Mike" Markkula Jr. said the company is renewing a campaign to persuade PowerPC partner IBM to abandon its OS/2 operating system for the Macintosh operating system.

But then Apple declined to comment further, and IBM denied there were any plans to replace OS/2 with Mac OS.

"We have no plans to switch from OS/2 to a Mac operating system, no plans to merge the operating systems, and we don't plan to manufacture IBM-labeled Mac clones," said IBM spokesman Tim Breuer in Armonk, N.Y.

In fact, IBM doesn't appear to be taking Apple's private or public bait. The company has spent an estimated $2 billion during the past decade to promote and develop OS/2. Just last month, it survived a flap over Chairman Louis V. Gerstner's comment that IBM was conceding the desktop to Microsoft Corp.

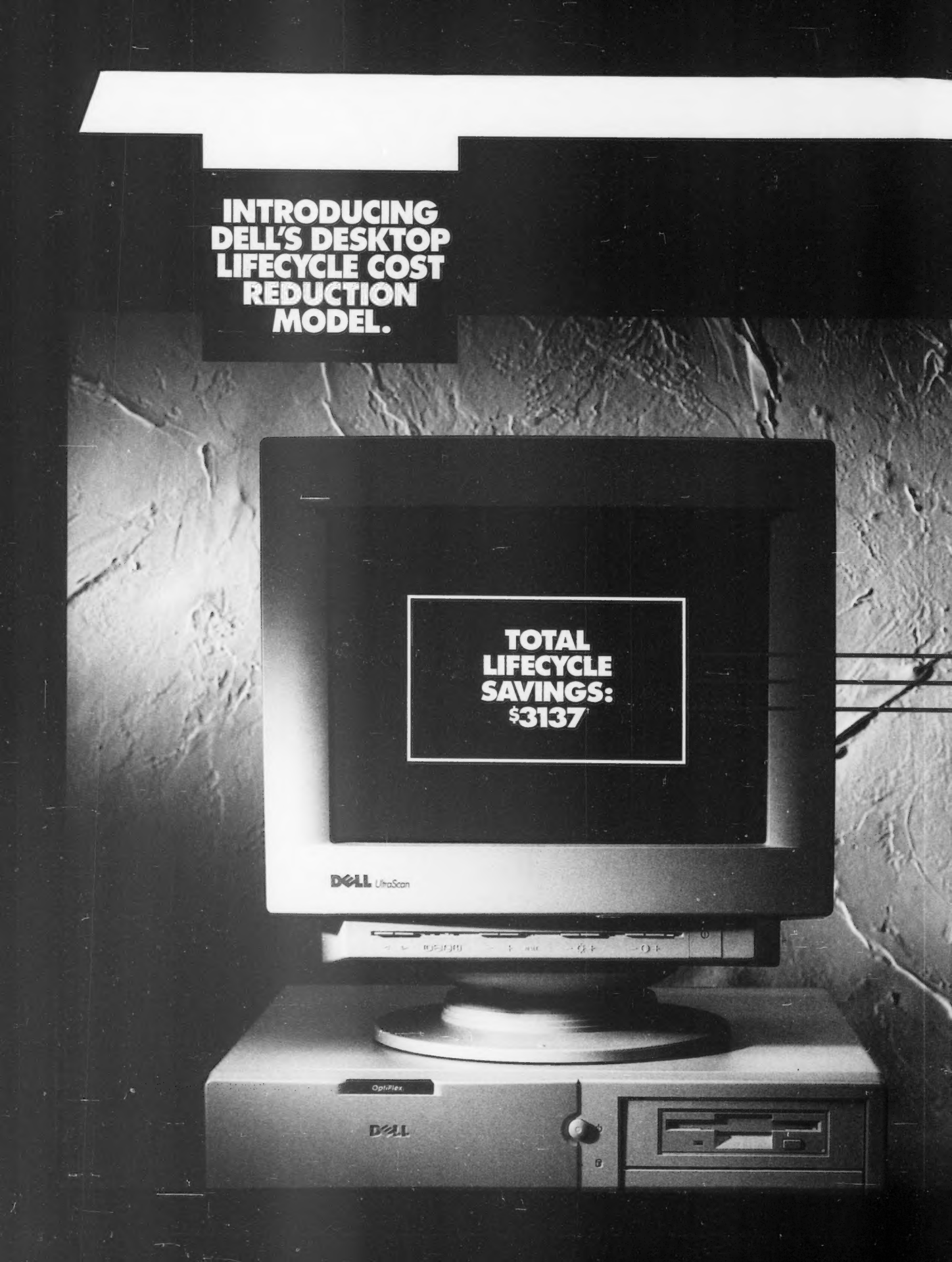
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WHAT? Microsoft WEAK?




Microsoft has some business, personnel and technical soft spots that could spell trouble for it in the future. An exclusive excerpt from the new book *Microsoft Secrets*.

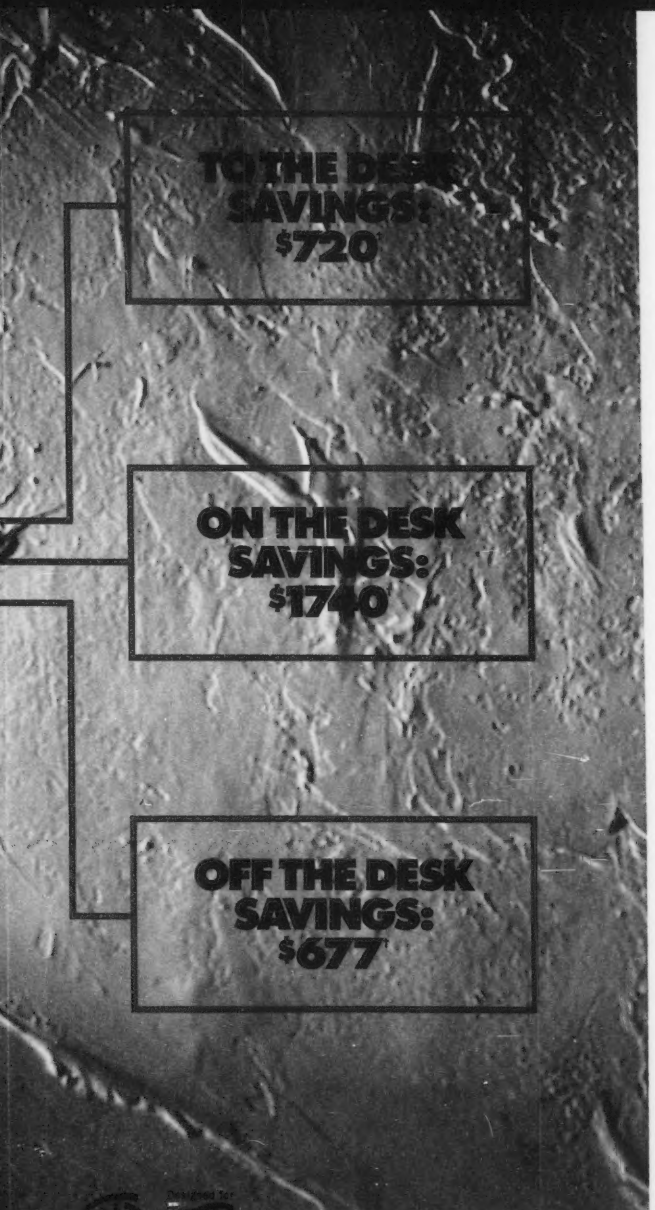
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Oct. 2, 1995



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Microsoft wants to merge operating systems, but it will be forced to pursue a two-operating system plan for both the home and corporate user, according to Charles Babcock.


**"From their perspective, it's more of a prove-it-to-me attitude."**

*That's the word from Michael Puldy, manager of resource management at Barnett Banks, who says the* **client/server features in MVS** *are not "taken very seriously" by the Unix folks at his company.* **Large Systems, page 81**

## Choice Cuts



*Proactive IS managers such as The Vanguard Group's David Stoltzfus were able to head off Microsoft* **Windows 95 hypertension.** *Here's how they had the first, and last, word with users and staff.* **Management, page 99**

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**Coming next week: Computerworld's** *annual* **Premier 100** *issue. Find out how the best in the business make the most of their IS spending, which averages 2.6% of revenue.*



# Client/server deal to save $1 million daily

By Julia King

In a bid to save as much as $1 million every day, $14 billion Xerox Corp. has begun the gargantuan task of ripping out some 200 20- to 30-year-old legacy systems and replacing them over the next year with a suite of highly customized, client/server applications from Oracle Corp.

If all goes as planned, Xerox and Oracle will jointly market the customized applications, which will include a good chunk of Xerox's proprietary sales force automation, workflow and document management technology.

"We didn't go into this with the idea to increase revenue, but we also believe that what we have done makes a very robust application that other companies will want," said Jag Dalal, Xerox's vice president of information management.



**Xerox's Jag Dalal:** *'We didn't go into this with the idea to increase revenue'*

Internally, the integrated systems — part of an estimated $300 million enterprisewide re-engineering initiative at Xerox — will support all of the company's marketing, sales and administrative processes on a global basis.

### Saving millions

The new enterprisewide applications are also expected to afford huge productivity gains and significant decreases in cycle times that together could add up to as much as $1 million a day, according to Bill Pittman, Xerox corporate vice president in charge of sales and marketing business processes.

Xerox is also banking that the massive integration will advance the company several giant strides toward its goal of delivering corporate and customer information to workers on the front line.

Under the new integrated system, "Xerox will be able to push information to its field [staff], giving them information as they need it," Pittman said.

This contrasts sharply with current processes under which typical Xerox sales representatives spend 30% of their time chasing down information stored in dozens of disparate systems, Pittman said.

Announced last week, Xerox's multimillion-dollar decision to standardize on Oracle applications represents a major coup for the Redwood Shores, Calif., vendor. Oracle beat out high-flying SAP AG to win the estimated $25 million deal.

In addition to applications software, Oracle is supplying the project with its Oracle7 database technology and some five dozen full-time consultants who are now working at Xerox in Rochester, N.Y., under a January 1996 deadline to complete the customization.

Simultaneously, another 60 or so Xerox information systems staffers are extracting and preparing legacy data for migration to the new Oracle applications. After that, their job is to fold in configuration and pricing models and customer and marketing databases developed under Xerox's ongoing sales force automation project [CW, Oct. 31, 1994].

"Of the 85,000 people working for Xerox, this will affect about 30,000 people and how they work," Pittman said. Given that fact, it is one of the boldest and broadest programs, he said.

"And with the aggressive [one-year] schedule, I do stay awake a little at night worrying about all of this," he said.

And rightly so, according to a Xerox insider familiar with the plan.

"It still is very high risk in terms of the benefits and whether we can actually pull it all off," Pittman said. Xerox has yet to resolve integration issues that surfaced with the deployment of laptops to its 4,000 sales staffers, he noted.

"Mail is the biggest complaint, but it's really a combination of things," the Xerox insider said. "As you add virus checkers and software distribution software to your laptop, it slows the whole process down because you're trying to do more things."

# Cisco customers say no to acquiring minds

By Bob Wallace
ATLANTA

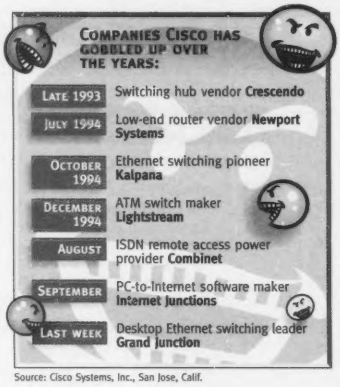
**■ Several longtime Cisco Systems, Inc. customers blasted the internetworking giant last week after hearing of its plan to acquire yet another small firm — this time desktop Ethernet switching pioneer Grand Junction Networks, Inc. for $348 million.**

**@ Talkback@cw.com**

**Some customers are blasting Cisco for buying too many companies, too fast. What do you think? Should Cisco be spending more on research and engineering and less on acquisitions? Sound off to us at talkback@cw.com. Please include your full name. We'll publish a sampling of reader opinions in an upcoming issue.**

The move, which was announced at the Networld/Interop '95 conference held here, drew angry responses from five longtime Cisco customers. The users collectively said those acquisition dollars would be better spent on continued enhancements to the vendor's myriad products, beefing up its internal engineering group and spending more on research and development.

"Cisco needs to focus its efforts on hiring more good engineers and bringing the price of its products down, rather than spending hundreds of millions of dollars on acquisitions that could be bigger than they can chew," said John Scoggin, supervisor of network operations at Delmarva Power & Light Co. in Newark, Del.




Source: Cisco Systems, Inc., San Jose, Calif.

The power company uses Cisco's low-end 2500, midrange 4500 and high-end 7000 routers in its sprawling network. "This consolidation is a worrisome trend at best," Scoggin said.

The Grand Junction bid is Cisco's seventh in the past year or so. Among the company's buys were Ethernet switching pioneer Kalpana in mid-1994 and remote access power Combinet, Inc. just months ago.

Other users said Cisco's acquisitions will delay their buying decisions.

"The acquisitions are going to back users off buying decisions and keep them focused on current products — unless there are major network performance problems," said Bill Horst, chief at the General Services Administrations communications branch in Philadelphia.

At the show, Cisco President and Chief Executive Officer John Chambers said there is no end in sight as far as acquisitions are concerned. He estimated that his company could do four to six more acquisitions in the next year alone. "We'd do even more if we could absorb more companies," he said. Those comments struck a nerve with Cisco customers.

"Oh God, that's a red flag for users," said Barbara Maaskant, director of information services at Emory University's Rollins School of Public Health. "Cisco products are rock-solid and backed by top-rate service and support, but the biggest challenge they face is reconciling all these different products. We need to know how they plan to do it and when we'll see their time frames before we make any moves."

Chambers defended Cisco's strategy of acquiring smaller vendors.

"We want to be first or second in every internetworking market we see as important, but with the industry growing at 30% to 50% a year, we have no choice but to buy technology and talent," Chambers said.

# Investors may pull Taligent plug

By Lisa Picarille

They may have started out tickled Pink, but Taligent, Inc. investors are now seeing red.

Sources close to the Cupertino, Calif., company said Taligent's investors — IBM, Apple Computer, Inc. and Hewlett-Packard Co. — have already spent in excess of $100 million on the 3½-year-old company and may pull the plug, given Taligent's lackluster progress thus far.

The start-up's original, and very ambitious, charter was to develop an object-oriented, platform-independent operating system based on the Pink technology then under way at Apple. That plan was scrapped in the first year, however, leaving Taligent refocused on creating CommonPoint 1.0, an object-oriented application development tool, which shipped in July to its partners.

Industry watchers view Taligent as a disappointment because it made unrealistic promises, spent tons of cash and never delivered.

Meanwhile, its partners embarked on separate development efforts to solve the problems of working across multiple platforms

"Taligent is a failure, and nobody at IBM or elsewhere will be broken-hearted if they pull the plug," said Judith Hurwitz, president of Hurwitz Consulting Group located in Newton, Mass. "This is more than just rumblings. I'm confident it will happen," she said, citing sources close to IBM and HP. Neither company returned calls for comments on their plans last week.

However, Dick Guarino, who was named acting chief executive officer of Taligent earlier last month, dismissed the naysaying as "untrue and just rumors." He said Taligent, which expects to show modest revenue in 1996, is spending the next 90 days hammering out its annual business plan.



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NETWORLD+INTEROP 95 Atlanta

# Novell to users: All roads lead to NetWare

## Three-year plan to upgrade file, print and directory services

By Laura DiDio
ATLANTA

Novell, Inc. last week laid out its three-year corporate strategy and product road map — sans UnixWare, or the so-called Super NOS — at the Networld/Interop '95 trade show here.

This latest plan calls for Novell to take NetWare back to the future by refocusing development efforts on the core network operating system — without the distraction and financial drain of Unix development, said Sheldon Laube, Novell's chief technology officer.

Rather than build a single microkernel melding NetWare and UnixWare, Novell will deliver a major upgrade of NetWare every 18 months for the next three years. Code-named Green River, Moab and Park City after cities in Utah, the forthcoming upgrades were designed to enhance existing core file, print and directory services in NetWare 4.1.

While Novell is out of the Unix development business for good, the company will "evolve NetWare by adding Unix source technology and capabilities into various parts of the NOS as well as the NetWare Loadable Modules," Laube said (see story top right).

Users and analysts reacted with pragmatic enthusiasm to the announcements, noting that the new Novell looks suspiciously like the Novell of old.

"I like it. It's about time they got back on track. Novell is basically ridding itself of all the companies and technologies that Ray Noorda bought, like DR DOS and UnixWare," said longtime NetWare user Roosevelt Giles, president of Information Management Systems, Inc., a systems integration and consulting firm based here.

### Tough sell

An information systems manager at a large East Coast financial firm said Novell's repositioning doesn't alter the fact that his firm will most likely migrate from NetWare 3.x to Microsoft Corp.'s Windows NT Server.

"NetWare is a great file and print server, but we've been very dissatisfied with the lack of database and application server capabilities," said the IS manager, who attended the Novell press conference but requested anonymity. "Novell has been bending over backward trying to get us to upgrade to NetWare 4.1. But higher-level management here is insistent on looking at NT because they believe that's where the industry is headed."

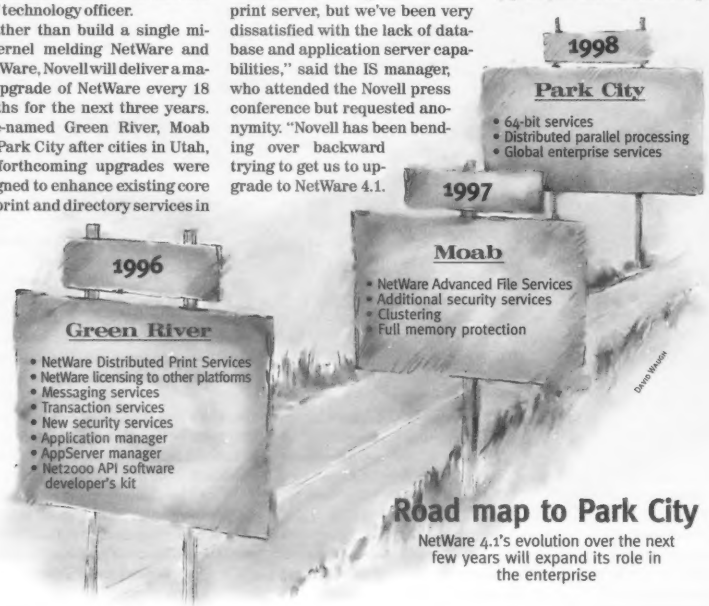
NetWare 4.1's NetWare Directory Services (NDS) enterprise database directory will continue to be a combination "Yellow and White Pages phone book" that lets businesses identify and connect all network resources, objects and users enterprisewide, Laube said.

Starting with the Green River release in mid-1996, the Provo, Utah-based firm will endeavor to build a "smart global network." It would extend the various NetWare network services and allow users to connect their networks to the Internet and commerce-based networks, Laube said.

Finally, Novell will add hooks to the architecture via its Net2000 API, which ultimately will let users access and manage these network services from non-NetWare platforms — including rival Microsoft's NT Server and Windows 95 platforms — beginning next year.

The Green River release, for instance, will incorporate features such as NetWare Distributed Print Services, which will greatly simplify print jobs across the enterprise. It will give network administrators a complete status report on print jobs and intelligence on the printers themselves. Other features expected in Green River are the Net2000 API software developer's kit, new licensing, messaging and transaction services as well as improved security.

The 1997 release of Moab will include clustering functionality and full memory protection, while the Park City version, due out in 1998, will deliver 64-bit services, distributed parallel processing and global enterprise services.




**Road map to Park City**
NetWare 4.1's evolution over the next few years will expand its role in the enterprise

## Name game

What's in a name? You decide.

Contrary to published reports, the Super NOS initiative that combines NetWare and Unix in a single network operating system isn't dead, said Sheldon Laube, Novell's chief technology officer.

But don't look for Novell to deliver *that* Super NOS in its next-generation release of NetWare, now code-named Green River.

"We will not sell a product that combines Unix and NetWare, but our customers will have such a product available to them from SCO and Hewlett-Packard," Laube explained. "In addition, we've announced a new version of Super NOS — in Green River — that will provide users with integrated support for Windows NT Server from within NetWare."

Laube said Novell decided to scuttle its original UnixWare/NetWare effort when it realized users weren't looking for a single solution that was Unix and NetWare. "Working with SCO and HP, we can deliver the vision of Super NOS far better and more effectively than Novell could have done alone," he said.

Besides the newly renamed, forthcoming versions of NetWare, Novell users will also have to get used to a new corporate logo and a new name for another product initiative. The NetWare Embedded Systems Technology is now known as Nested NetWare.

*— Laura DiDio*

# Novell opens door for Unix vendors

By Jean S. Bozman

Novell may have given up on Unix ownership, but the company plans to keep some key Unix technology as it moves forward with its networking strategy. That way, Novell's NetWare and Unix environments will be linked by common middleware, Novell said last week.

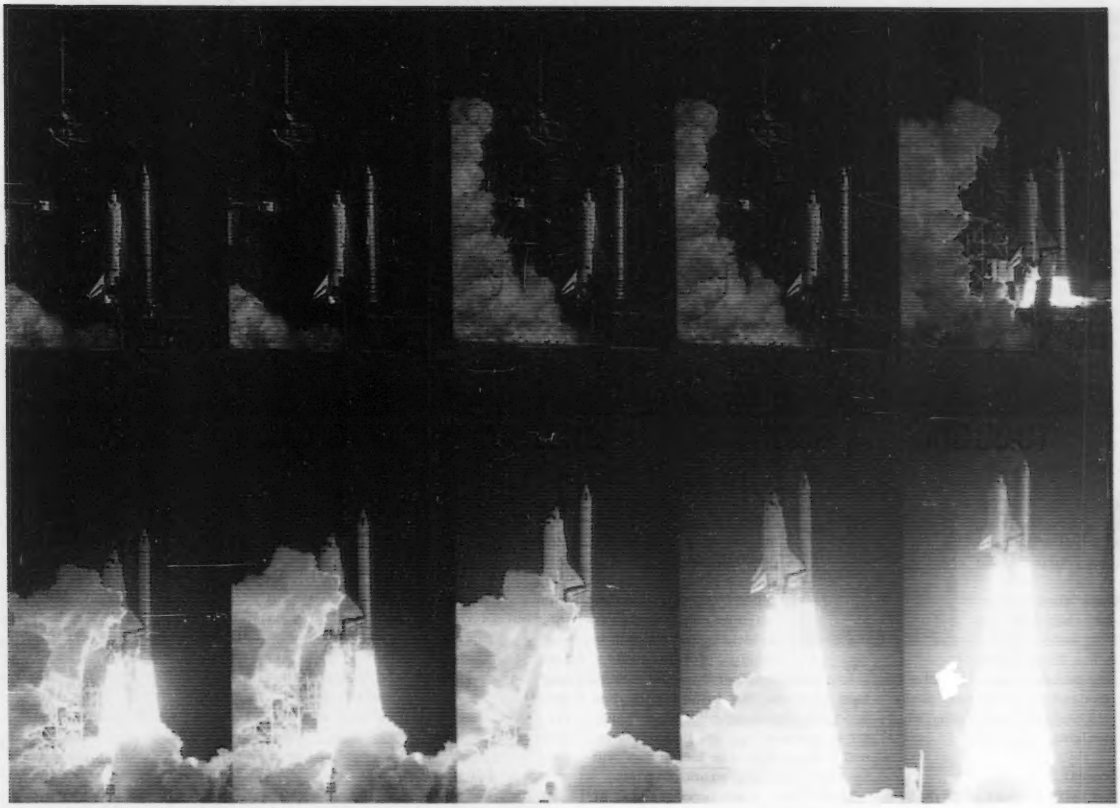
Novell will work with Hewlett-Packard Co. to blend the Open Software Foundation's Distributed Computing Environment (DCE) software with its NDS software for a future 64-bit Unix release for Intel Corp. chips. Novell will also work with SCO, Inc., allowing it to merge NDS with the current crop of 32-bit Unix systems. SCO is buying Novell's UnixWare business for about $60 million in stock [CW, Sept. 25].

DCE will also emerge as part of Novell's Net2000 API offering for distributed applications (see story at left).

DCE's naming and directory services will provide a consistent scheme for Unix, NetWare and Microsoft's Windows NT files. It will help unify navigation through thousands of files stored on networked servers.

But blending the DCE software with Novell's core network operating system won't guarantee the $2.1 billion firm's success in the middleware arena, some skeptical analysts said. That is because users routinely mix and match middleware from a variety of vendors, and much of the action takes place behind the scenes in systems software, they said.

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# Win 95 support may boost ISDN fortunes

By Neal Weinberg
LONG BRANCH, N.J.

Microsoft Corp.'s ringing endorsement of ISDN last week could propel the underachieving network technology to widespread use for telecommuting and Internet access.

Microsoft announced it will support native Integrated Services Digital Network (ISDN) on its Windows 95 operating system by year's end. That eliminates one of the major obstacles to ISDN implementation: the need for ISDN-specific applications. Now, any application written for Windows 95 will be compatible with ISDN, according to Microsoft.




Users and analysts hailed the Bill Gates seal of approval as the boost ISDN needed to shed its image as a technology in search of an application.

Charles Fitzgerald, product manager at Microsoft's Personal Systems Division, told the North American ISDN Users' Forum here last week that Microsoft views ISDN as the primary internetworking vehicle for delivering communications capacity to PCs.

ISDN has been "an orphan stepchild for so long," Fitzgerald said, but it's time has finally come as the only mass-market alternative to analog modems. "It's the only choice out there; it basically works, and it's basically available," he added.

More than 2,400 ISDN switches have been installed through 1994.

### Easy does it

Extending ISDN support into what is expected to be the dominant PC operating system will provide users with plug-and-play ISDN, said John Leicht, an ISDN user in Raleigh, N.C. And that will spur additional use of the technology, he said.

"This will essentially make it more mass market," agreed Steve Rogers, chairman of the ISDN Users' Workshop. Both Rogers and Fitzgerald noted that ISDN still has wrinkles that need to be ironed out: It remains difficult to order and configure.

But the ISDN Users' Forum is chipping away at those problems. Ordering is being simplified by new ordering codes, and regional Bell operating companies are increasing the availability of ISDN.

Microsoft's move to support ISDN in the operating system will "make it available to the masses in simplified form," said Andrew H. Kauffman, a networking consultant in Schaumberg, Ill. Users will be able to buy an ISDN device off the shelf, go home and plug it in, he said.

John Dunkle, an analyst at Workgroup Strategic Services in Nashua, N.H., said Microsoft has chosen ISDN as the "high-bandwidth plumbing" of choice to push beyond the limitations of 28.8K bit/sec. modems. ISDN offers two 64K bit/sec. channels and can transmit voice, data and video.

ISDN can run on existing copper wires and costs as little as $25 a month in some parts of the country.

Len Rudin, a network analyst at Salomon Brothers, Inc. in New York, has been implementing a pilot telecommuting program using ISDN. He said Microsoft's support for the technology will speed implementation and cut costs.

Herb Geiss, a senior consultant at Bellcore's Core Networks organization in Morristown, N.J., said additional ISDN applications would include videoconferencing, telepublishing, remote radio broadcasting and remote diagnostics.

# GroupWise XTD debuts

## Novell groupware update wins fans for ease of use

By Suruchi Mohan
ATLANTA

Novell, Inc. hosted a coming-out party for GroupWise XTD, its collaborative computing environment, here last week. For the first time since Novell started cautiously informing its user base about the product six months ago, the company actually demonstrated it.

**Groupware**

User reaction was positive, with most viewing XTD as easy to use and a vast improvement over the current GroupWise 4.1 product.

"GroupWise 4.1 has more capability than any other messaging system on the market in terms of how easy it is to get it up and running," said Brad Lanier, an independent software developer in San Diego. "XTD is a welcome extension."

### What's new

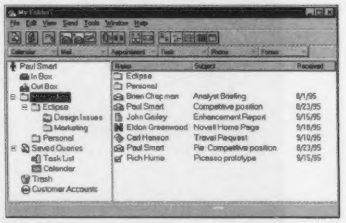
GroupWise 4.1 is a file-sharing messaging system that includes calendaring/scheduling and basic workflow. A client/server-based next-generation product, GroupWise XTD is expected to ship in the first quarter of next year. It will build upon Version 4.1 by offering document management and integration with NetWare Directory Services.

Indeed, Novell seems to have taken some user concerns to heart and worked them into XTD. Stephen Berger, a network engineer at Premier Network Solutions, Inc., a GroupWise reseller in Cincinnati, said he is glad Novell has done away with the splash screen — the company logo users see when they first log on. Users can go directly to the in-box. This is especially good for remote users, who have to deal with one less screen as they dial in.

Another key feature is XTD's ability to delete from personal address books any user name an administrator deletes from the core address book, said Troy Kennedy, an information technology engineer at Earle Palmer Brown, an advertising agency in Bethesda, Md. GroupWise 4.1 couldn't do this. "The issue exists with all current mail systems," but Novell has been able to fix it, he added.

"The address book will be much better," agreed Melvin Stanley, senior associate of the Small Computer Technical Center at Ogden Air Logistics Center in Hill Air Force Base in Utah. He noted it is also now much easier to add names to the address book.

Users said administration in general is easier. "I like the move toward a single point of administration for GroupWise within NDS," Lanier said. However, because there are a lot of NT servers in use, Novell needs to have a runtime version of NetWare 4.1 in its GroupWise box to capitalize on the whole market, which it doesn't, he said.



**GroupWise XTD,** *Novell's next-generation messaging system, features an improved address system and easier administration*

Of course, users do have concerns. For one, XTD will support only Microsoft Corp.'s Windows 95. There is a "huge base of Windows 3.1 and Windows for Workgroups, which XTD is ignoring," Berger said.

Further, in its effort to make migration to GroupWise from Lotus Development Corp.'s CC:Mail and Microsoft Mail easier, Novell gives end users the option to handle some of it themselves. Berger said he didn't think network administrators would like that because of the problems it would pose.

**A closer look** at GroupWise competitor Notes. See page 59.

# Boston Chicken exec joins IBM

By Julia King

IBM last week tapped as its chief strategist J. Bruce Harreld — the same man who brought touch-screen information kiosks to fast-food chicken outlets.

Harreld, 44, probably caught IBM's eye during his most recent tenure as president of Boston Chicken, Inc., where he earned high marks for his shrewd application of simple, but effective, information systems.

### Instant feedback

Among other things, Harreld placed in-store PC-based kiosks in the chain's 400 outlets to gather instant feedback from diners about food quality and restaurant cleanliness. The installation of Notes groupware for communications between stores and the company's headquarters in Golden, Colo., was also his idea.

At IBM, Harreld will be based in Armonk, N.Y., and report directly to Chief Executive Officer Louis V. Gerstner. Harreld replaces James Cannavino, who retired as IBM's chief strategist in March.

Harreld began his career as a consultant at the Boston Consulting Group after graduating from Harvard University's Business School in 1975. In 1982, he became vice president of strategy and development at Kraft, Inc., where he also served as president of the company's frozen foods division and chief information officer.

## Corrections

Due to a reporting error in "CA, IBM create different paths to storage" [CW, July 10], Andy Raibeck of Connecticut Mutual Life Insurance Co. was quoted as saying that a new release of ADSM would be capable of recognizing when the same file is backed up on multiple systems. Raibeck actually said such a feature is desirable, but he didn't say it would be supported in any forthcoming release of ADSM.

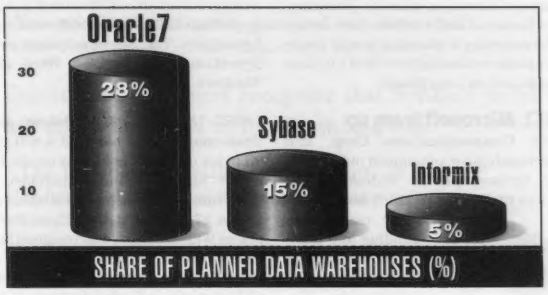
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Due to a reporting error in "L.A. law firm gives imaging its day in court" [CW, Aug. 21], the firm Hennigan, Mercer & Bennett was incorrectly identified.

# Before You Look Into A Warehouse, Check This Inventory

Data warehouses are central information repositories for storing and analyzing vast amounts of historical and reference data from a number of different sources, enabling users to gain insights into corporate performance and customer behavior that cannot be gained using disconnected operational systems. Oracle7 has more production features for data warehousing than any other DBMS available, bringing very large database capacity, fast query execution and the management of any data type to the open systems data warehouse.

| DATABASE COMPARISON | | | |
|---|---|---|---|
| | **ORACLE7** | Sybase System 10 | Informix 7.1 |
| Terabyte Databases Supported | Lots | Never | None |
| Scalable SMP Support | Yes | Never | Yes |
| Scalable MPP Support | Yes | Never | No |
| Parallel Query | Yes | Never | Yes |
| Parallel Load | Yes | Never | No |
| Parallel Index | Yes | Never | Yes |
| Parallel Summarization | Yes | Never | Yes |
| Parallel User-defined Functions | Yes | Never | No |
| Star Query Optimization | Yes | Never | No |
| Integrated Replication | Yes | Yes | No |
| OLAP Integration | Yes | Never | No |
| In Memory DB (64-bit) | Yes | Never | No |
| Integrated Text/Video | Yes | Never | No |
| Spatial Data Integration | Yes | Never | No |
| | YES | NEVER | NO |




META GROUP *ADS Data Warehousing Survey* 1995.

According to Meta Group, Oracle7 is chosen by users nearly twice as often as Sybase and five times as often as Informix for data warehousing applications. If enabling employees to make fast, accurate decisions is important to your company's performance, call Oracle at 1-800-633-1071, Ext. 8197. Or download videos of our customers explaining the competitive advantage they get from the Oracle Warehouse solution at http://www.oracle.com/info/dw/video.html.

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# Lotus announces 'net gains

## Will new Web products keep competing vendors at bay?

By Suruchi Mohan
ATLANTA

Out of fear of being overtaken or simply in foresight, Lotus Development Corp. last week reinforced its commitment to the Internet by announcing the InterNotes Web Publisher 2.0 and CC:Mail for the World Wide Web Release 1.0.

The announcements came on the heels of Netscape Communications Corp.'s acquisition of Collabra Software, Inc. [CW Sept. 25]. That union once more puts Lotus in the unenviable position of defending itself not only against the Web but against the groupware capabilities the merged companies would offer.

"InterNotes seems to be positioned as a way for Notes to coexist with the Internet as opposed to being a full participant," said Eric Brown, an analyst at Forrester Research, Inc. in Cambridge, Mass.

From a strategic standpoint, he said, InterNotes is a tool, not a standard or an Internet resource. This could be a problem because Collabra and Netscape are basing their products on open standards and application programming interfaces.

InterNotes Web Publisher 2.0 opens two-way communication between Notes and the Web. While Version 1.0 allowed only the publication of Notes documents on the Web, Version 2.0 lets Notes users capture information from the Web and put it into a Notes document. The Web version of CC:Mail allows users on the Web to access their CC:Mail accounts from anywhere.

InterNotes makes it easier to upload and update documents to the Web, said Richard Kesner, chief information officer at Babson College in Wellesley, Mass. "We're heavily entrenched in Notes, so switching costs may not be worthwhile" if the organization were to go with Netscape and Collabra, he said.

The advantage to John Hodge, CIO at NAC Reinsurance in Greenwich, Conn., is that he has "Notes databases that we want to put out to our clients' desks. We can take these forms and put them on the Web to get to a broader range of people," he said. Hodge said he has no plans to switch from Notes to a combined offering from Netscape and Collabra.

Preventing its base from switching over to Netscape and Collabra might be all Lotus is able to do with these announcements, said Stan Lepeak, a program director at Meta Group, Inc. in Stamford, Conn. "It is critical for Lotus/IBM to be aggressive in integrating Notes with the Web," he said.

He predicted Lotus will come out with a browser to let users do in InterNotes what they can do with a Notes client. Although selling a Web client instead of a Notes client will mean much less revenue, Lotus will be forced to do it, he said.

**A new chapter**

Lotus has announced Pages, an X.500 component that supports its Lotus Messaging Switch (LMS) translator. Pages will allow users to transfer information from any messaging system on LMS to X.500.

**Lotus has promised great things for Notes,** but users have yet to see them. See page 59.

# Merrill Lynch inks $8M software deal with Next

By Frank Hayes
and Thomas Hoffman

Merrill Lynch & Co. this week said it will buy $8 million worth of object-oriented software and services from Next Computer, Inc. in Redwood City, Calif.

The retail brokerage giant will spend $6 million on software and $2 million on consulting and support services. The arrangement encompasses Next's full range of software. That includes the OpenStep development environment; Portable Distributed Objects, Next's object-oriented communications software; and the company's recently announced WebObjects system for developing Internet-based applications.



**Merrill Lynch's** *Howard P. Sorgen: The firm will use Next software to enhance its Web page*

According to Merrill Lynch, the tools will be used to build new applications companywide. Creating interoperability among disparate platforms and multiple geographies "is our No. 1 priority," said Michael Mendez, vice president of technology strategy planning at Merrill Lynch. He is overseeing the broker's first Next-based project: a middle-office futures and options system under development and scheduled for release by mid-1996. The deal is a major commitment to Next by the brokerage firm and represents about 1% of Merrill Lynch's annual information systems budget.

Merrill Lynch expects to reap the benefits of reusable code and zippy application development by using Next software, but Mendez said the firm's programmers have faced a steep learning curve on the object technologies. The brokerage picked 12 to 15 of its programmers this past spring to undergo the technical retraining required to use Next software.

Merrill Lynch will use Next's WebObjects software to develop what it hopes will become the "premiere" World Wide Web site in financial services, said Howard P. Sorgen, senior vice president and managing director of global information services.

## News Shorts

### Lotus suit lands in highest court

The U.S. Supreme Court last week agreed to review the controversial appeals court decision that denied copyright protection for the user interface menus in **Lotus Development Corp.**'s 1-2-3 spreadsheet. Lotus accused **Borland International, Inc.** of copying the 1-2-3 menu and commands and sought $100 million in damages. But an appeals court in Boston ruled that an interface is merely a functional "method of operation" and thus ineligible for copyright protection.

### Microsoft boosts 'net security



**Microsoft Corp.** last week published Private Communication Technology (PCT), a free Internet protocol designed to tighten application security. PCT fixes several flaws in the popular Secure Sockets Layer protocol that is used by Internet developer **Netscape Communications Corp.** and others. Microsoft also joined with **Visa International, Inc.** to announce Secure Transaction Technology, a specification that was designed to ensure the integrity, confidentiality and authentication of credit-card transactions across public and private networks [CW, July 31].

### Sun, Toshiba strike PDA deal

**Sun Microsystems, Inc.** has edged closer to marketing a portable device for Internet access. It announced last week that it would codevelop portable devices with **Toshiba Corp.** in Tokyo. Toshiba will build a prototype personal digital assistant for its sales force, combining Toshiba's handheld devices with Sun's Java object-oriented language for Internet applications, Hot Java browser and Netra servers.

### New view from Cisco

**Cisco Systems, Inc.** has announced CiscoView, a Windows-based package that will let network administrators manage a series of low-end internetworking packages. CiscoView comprises a Simple Network Management Protocol configurator application and a net management application. Each costs $1,000.

### CDPD hits the Big Apple

**Bell Atlantic Nynex Mobile** last week launched Mobile AirBridge, the first commercially available Cellular Digital Packet Data (CDPD) wireless communications service in New York. The service will be available in Manhattan and parts of Brooklyn, Queens, Westchester, Rockland and northern New Jersey. The company is planning to add coverage in the remaining New York City boroughs and on Long Island.

### MCI, Microsoft team up



**MCI Communications Corp.** and **Microsoft** have announced plans to offer turnkey, private wide-area networks that would be much less expensive for users than building and managing their own router-based internetworks. Users will be able to access the MCI network using a dedicated access line or through Integrated Services Digital Network Basic Rate Interface lines. Pricing wasn't available for the package, which will ship in January.

### IBM adds low-priced PC

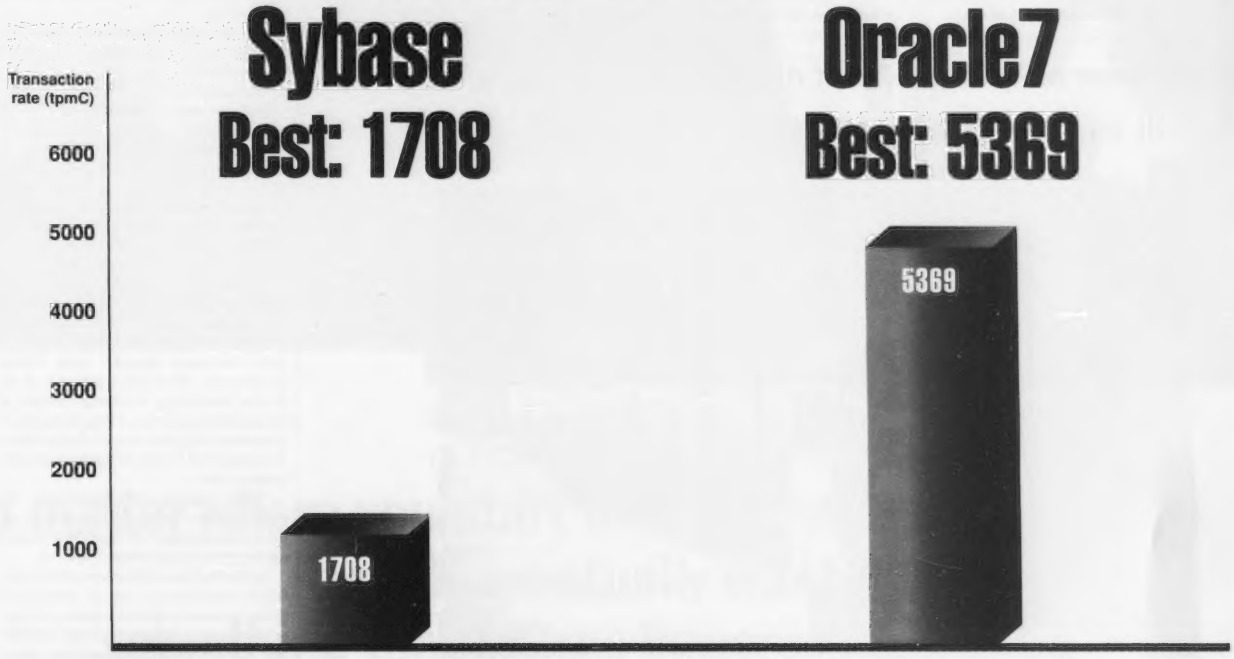


**IBM PC Co.** last week added a low-cost Pentium model to its PC 300 family. The system, which costs $1,695, includes a 14-in. monitor, 8M bytes of RAM and a 540M-byte hard drive. It will ship without a second-level cache, however. The systems are available in Microsoft's Windows 95 and IBM's Select-a-System configurations. The Select-a-System configuration supports OS/2 Warp and Windows.

**SHORT TAKES** The **U.S. Patent and Trademark Office** has said it will put 8G bytes of patent abstracts on the Internet for free public searches.... **Quantum Corp.** has named Michael A. Brown, 37, chief executive officer. He replaces William Miller, who resigned last month. Brown, an 11-year veteran of Quantum, was most recently president of the company's largest division.... After 19 years of direct sales, **SAS Institute, Inc.** has tapped **Computer Sciences Corp.** to be its first independent provider of SAS software and consulting.... Ron Zambonini, president of **Cognos, Inc.** in Ottawa, has added CEO to his title.

# Database Performance

The TPC-C™ test is the industry standard benchmark measuring database On-Line Transaction Processing (OLTP) performance. On July 24, 1995, Hewlett-Packard published an audited TPC-C benchmark of Oracle7 that set the record for open systems performance, beating Sybase System 10's best result on any computer by more than 200%. (It's almost not worth mentioning, but we also creamed Informix.)




Sybase's CEO recognizes they have technology and performance problems. So should you.

" We were slow to realize this [scalability] was an issue in the marketplace."
Mark Hoffman, Sybase CEO, *The Wall Street Journal*, April 14, 1995

" We're trying to investigate the problems now. You peel back the onion, you find out more stuff."
Mark Hoffman, Sybase CEO, *San Francisco Chronicle*, April 5, 1995

Experts and customers recognize that Sybase's problems will take a long time to fix. So should you.

" The time between major enhancements of their [Sybase's] database is the longest of any major vendor."
Salomon Brothers, *Computerworld*, April 17, 1995

" They've got a lot of work to do and they have to go pretty deep in the core of the code."
First Albany, *Information Week*, April 17, 1995

Scalability and parallelism make Oracle7 the technology and performance leader. The results of the HP TPC-C benchmark provide graphic proof.

" Oracle has set the high water mark for open systems platforms. We look for more to come."
Jim Johnson, Chairman, *Standish Group*, July 24, 1995

" Oracle's TPC-C numbers dramatically alter the competitive landscape...Oracle is telling the competition to put up or shut-up."
Peter Kastner, Vice President, *Aberdeen Group*, July 24, 1995

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TPC results as of July 21, 1995. Sybase results based on Digital Alpha 2100. ($555/tpmC). Oracle results based on HP 9000 T500. ($535/tpmC).

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# BackOffice sales chug slowly

By Stuart J. Johnston

One year after Microsoft Corp. introduced BackOffice, the first suite of server applications, sales remain only a small portion of the firm's overall Windows NT sales, Microsoft confirmed last week.

That may be because bundling isn't as useful or cost-effective for server software as it is for desktop applications — for example, Microsoft's dramatically successful Office suite.

"It's a concept that doesn't work well as a product, but it works well as a strategy," said Michael A. Goulde, a senior consultant at Patricia Seybold Group in Boston.

Many customers use one or two components and don't find it cost-effective to buy all of the server software as a bundle, he said.

The newest version of BackOffice, 1.5, includes Windows NT Server 3.51, the SQL Server 6.0 database, Systems Management Server (SMS) 1.1 for handling software distribution and inventory chores, Microsoft's Mail Server 3.5 and SNA Server 2.11 for connecting to IBM mainframes. Typically, products ship to users within 30 days of their manufacturing release; Version 1.5 just went to manufacturing.

Goulde said integration among the various server applications, consistent installation, administration interfaces and common security and monitoring functions help to produce a conceptual unity among the servers.

**Boxed up**

MCI Communications Corp. announced that in January it will offer Microsoft's BackOffice server suite with MCI network services to provide a turnkey WAN-in-a-box.

"Clearly, SQL Server is our strategic product right now, but that may change with Exchange Server," said Collins Hemingway, Microsoft's director of industry marketing. Exchange Server is the eagerly awaited but long-delayed replacement for Mail Server. Exchange is now expected to ship in the first quarter of next year.

"We're waiting very impatiently for Exchange Server," said Jim Martin, information manager at Pacific Bell's sales agency group in Anaheim, Calif.

Pacific Bell uses all but one of the BackOffice components, but it purchased them separately. Martin's group will examine whether to buy the entire BackOffice suite in the next few months under Microsoft's Select purchasing contract. Pacific Bell's sales group has 100 NT workstations and 10 NT servers running SQL Server, SMS and Mail Server.

Microsoft officials said most customers buy NT Server and SQL Server, with Mail Server also a popular package. The company also confirmed last week that it shipped 90,000 units of NT Server in the second quarter.

David Card, an analyst at market researcher International Data Corp., projected that Redmond, Wash.-based Microsoft will ship 390,000 units of NT Server this year, "which is what we were forecasting three months ago for 1996." That number, which is about half application servers and half file-and-print servers, doesn't include upgrades from earlier versions of NT, he added.

In the long run, Card said, the BackOffice concept will pay off for Microsoft, especially as users build client/server applications that leverage SQL Server functions with Exchange Server.

BackOffice "is like shrink-wrapping a version of the AS/400," which also bundles several server functions into the core system. "So it's not a dumb idea," Card added.

Meanwhile, Microsoft is offering a discount of about $40 off the client license, which is roughly $269, for users who buy BackOffice by the end of the year.


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# Phone hacker thwarted

## Victimized retailer to replace teleconference bridge after teen invades system to steal services

By Gary H. Anthes

A 16-year-old New York boy was arrested last week and charged with hacking into the systems of telephone companies and their customers in order to steal thousands of dollars worth of long-distance service.

The boy is believed to be the mastermind in a group of about 40 to 50 telephone hackers in the U.S. and Canada. Police said the case points out the risk companies take when they don't carefully manage their teleconferencing systems.

If convicted, the boy, Daniel Swerdloff of Merrick, N.Y., faces up to eight years in prison on a misdemeanor charge of criminal impersonation and felony charges of computer tampering and falsifying business records.

Swerdloff learned much of his criminal trade from colleagues on the Internet and from underground magazines, said Don Delaney, a senior investigator at the New York State Police Department, who made the arrest. The boy's parents gave him a subscription to "2600: The Hacker Quarterly" for his birthday, Delaney said.

Swerdloff is accused of "social engineering," in which he allegedly used unpublished telephone numbers at Nynex Corp. switching centers and lingo learned from his underground sources to impersonate Nynex technicians. He was able to direct Nynex to forward local phone numbers to open teleconferencing "bridges" at remote sites, police said.

For example, he is alleged to have tricked Nynex into forwarding the number of a local New York pharmacy to an open teleconferencing bridge at the Plano, Texas, offices of a retail store chain, Mervyn's California, which is based in Hayward, Calif. A teleconference bridge is a specialized computer, a switch that people dial into to connect for a teleconference.




Fellow hackers in Canada and elsewhere had local numbers forwarded to the Texas facility in a similar fashion and could then communicate among themselves on Mervyn's teleconferencing system, free of charge.

Even if a hacker hadn't been able to set up such a call-forwarding scheme, he could still dial the Texas teleconferencing number as a collect call. Any other hacker on the conference call would then agree to accept the charges, which were then billed to Mervyn's.

A source at Mervyn's, who asked not to be named, said AT&T Corp. has recommended that the company replace its teleconferencing equipment with more sophisticated and secure gear, change the compromised teleconferencing access number and turn on the bridge only during scheduled, authorized conference calls.

The source agreed that the ideal solution for a large company is to have a dedicated administrator schedule, manage and monitor each conference call and shut down the system between authorized uses. "But that's obviously a huge inconvenience to us when we have 35,000 employees spread over three time zones," he said. "Besides, if we shut down our bridge, these guys are just going to go elsewhere."

He said the company will replace the bridge with a newer model that requires callers to provide a confidential authorization code when calling in.

Delaney said the boy's parents just last week overheard him discussing criminal activities on the Internet. "The day before we arrested him, his mother ripped the telephone out of the wall and disconnected the keyboard from his computer," Delaney said.

**The movie *Hackers*** provokes commentary. See page 41.

# PowerPC platform nears preview

## Comdex to showcase first system from joint effort

By Jaikumar Vijayan and Lisa Picarille

The first system based on the PowerPC Common Hardware Reference Platform (CHRP) will be demonstrated at Comdex/Fall '95 in November.

CHRP is an effort by IBM, Motorola, Inc. and Apple Computer, Inc. to develop a common PowerPC-based hardware platform that will run multiple operating systems and give users cross-platform compatibility and access. Apple, IBM, Radius, Inc., Power Computing Corp. and others are readying their CHRP systems for delivery late next year.

According to Les Crudele, a senior vice president and general manager of Motorola's RISC chip unit, the demonstration system at Comdex will be "existing proof" that the CHRP hardware design can handle several operating systems.

"We are boxing up a reference motherboard that runs the entire CHRP environment," Crudele said. He said it will probably take until mid-1996 to provide full operating system support. An early version of the CHRP specification is being distributed under nondisclosure agreement to systems developers, Crudele said.

Currently, the only operating systems able to run on CHRP are Microsoft Corp.'s Windows NT and IBM's AIX. But CHRP versions of Apple's Mac OS, IBM's oft-delayed and still-unshipped OS/2 for the PowerPC, SunSoft, Inc.'s Solaris and Novell, Inc.'s NetWare network operating system are in the porting process. Most of these are expected to become available by the second half of next year.

**The Common Hardware Reference Platform (CHRP)**

| | |
|---|---|
| WHAT IT IS | An effort to develop a common, PowerPC-based hardware platform capable of running multiple operating systems |
| WHO'S INVOLVED | IBM, Motorola and Apple |
| STATUS | Early specifications are being made available to systems developers |
| AVAILABILITY | Second half of 1996 |

### Too late

But some users can't wait. Draper Laboratories in Cambridge, Mass., uses a utility that accesses a mainframe database to help administrators track project costs. The utility is written for a Windows environment, but more than 60% of the company's staff use Macintoshes. With CHRP, the impact of such incompatibilities will fade, said David Beckman, a PC and Macintosh support coordinator at Draper.

"What CHRP essentially does is make the operating system just another software package," he said.

The CHRP box to be demonstrated at Comdex will support I/O devices and peripherals for Apple and Intel Corp. environments. It will incorporate Peripheral Component Interconnect technology.

Meanwhile, IBM and Motorola last week said they are continuing to work on interim emulation technology that will allow users to run software designed for Intel and Macintosh systems on a PowerPC platform. Both firms refused to discuss specifics, but sources at IBM said the company is working on a hybrid chip called the 615 that will be able to run Windows and Macintosh applications.

# IBM moves some PCs into RISC server unit

By Jaikumar Vijayan

**PowerPC systems**

Three months after IBM's much-anticipated PowerPC desktop and notebook announcements, the company plans to move the products out of the IBM PC Co. and into its RS/6000 RISC server division.

According to a source at the company, IBM wants to move marketing and brand development of its recently announced Power Series 830 and 850 products under the RS/6000 division because they are likely to be "more of a natural fit in the RISC space."

The reason: IBM is having problems trying to position the high-end systems based on Microsoft Corp.'s Windows NT and IBM's AIX in the same space as its mainstream Intel Corp.-based commercial PCs.

OS/2 for the PowerPC, which was expected to make the IBM systems more mainstream contenders, continues to be delayed and isn't expected out before year's end.

"It is not a bad idea at all. The sales cycles for one of those boxes under Windows NT or AIX probably looks more like an RS/6000 sale rather than a PC sale anyway," said Ted Julian, editor of "The Gray Sheet," an industry newsletter published by International Data Corp. in Framingham, Mass.

*Senior editor Lisa Picarille contributed to this story.*



# AFTER HURRICANE ANDREW, THE PRESIDENT SENT IN THE TROOPS.

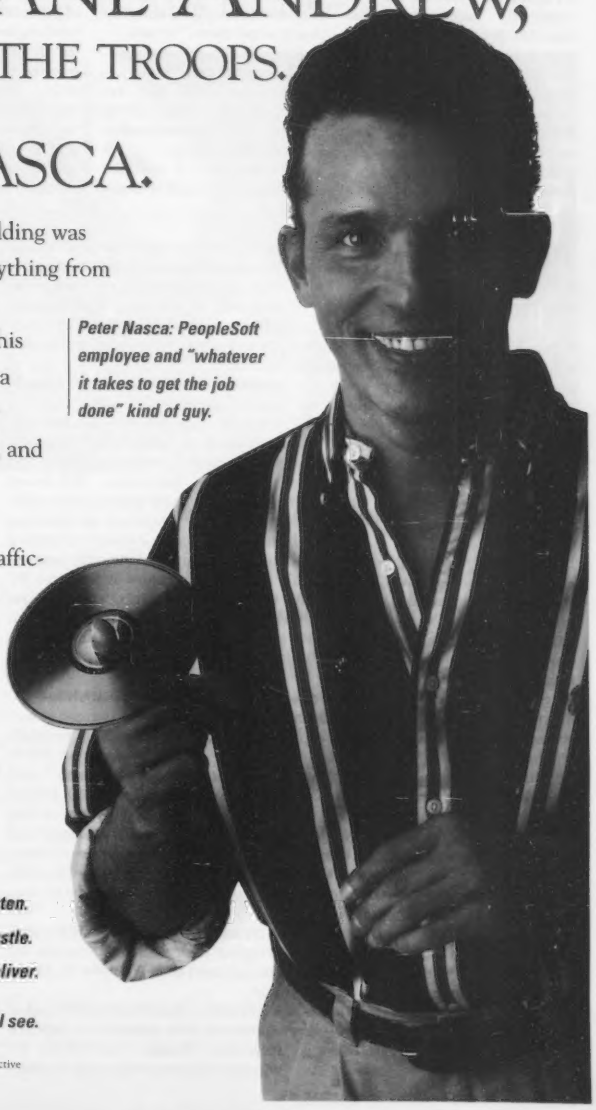
# WE SENT PETER NASCA.

The customer's old headquarters lay in ruins. Their new building was still under construction. And the roads were jammed with everything from refugees to roofers' trucks.

That was the situation facing PeopleSoft's Peter Nasca and his software implementation team when they landed in Florida on a stormy August morning, just days after Hurricane Andrew. Our customer, ProSource, was spinning off from its parent company, and needed to be up and running with PeopleSoft by December 31. Come hell or high water.

Despite the rubble, despite spotty electric service, despite traffic-choked highways, Peter and his team successfully implemented the software. He even flew back to Miami on Christmas Day to ensure the system would be up and running, smoothly and on time. The result: another satisfied customer for PeopleSoft.

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*Peter Nasca: PeopleSoft employee and "whatever it takes to get the job done" kind of guy.*

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# Ethernet, Token Ring take the limelight

## Proteon, Cabletron, Bay unveil products at Networld/Interop

By Bob Wallace
ATLANTA

While Asynchronous Transfer Mode (ATM) switch introductions have been in the spotlight for months, new low-cost and feature-rich Ethernet and Token Ring LAN switches took center stage at the Networld/Interop '95 conference here last week.

**LAN switches**

Among the introductions were the following:

- **Cabletron Systems, Inc.**, as expected, announced the SmartSwitch stand-alone switch and switching modules that support powerful Remote Monitoring (Rmon) capabilities for each port of the modules.
- **Bay Networks, Inc.** announced plans for similar capabilities across its switch line.
- **NetWiz Ltd.** unveiled switches that can support Ethernet switching, Token Ring switching or both.
- **Proteon, Inc.** in Westboro, Mass., introduced two LAN switches — one for Ethernet switching and one that supports Token Ring switching. Analysts said that at $99 per port, the Ethernet switch is the price leader.

The lowest price had been about $175 per port, according to Skip MacAskill, an analyst at Gartner Group, Inc. in Stamford, Conn. Proteon's pricing "will start a price war as vendors rush to keep pace and grow their market share," he said.

### Pleasing prices

Proteon users said they are pleased with the low price of the Ethernet switch and may look at the Token Ring switch.

"At that price, it wouldn't make sense *not* to look at implementing Ethernet switching," said Chez Tschetter, director of technical operations at Iway Internet Services, an Internet service provider in Sioux Falls, S.D. The company has shared 10Base-T Ethernet in buildings in three states and already uses Proteon's remote access products. "Our company is expanding quickly and sees the merits of Ethernet and Token Ring switching. We're going to eventually need more bandwidth, and switching is the answer," he said.

> "Our company is expanding quickly and sees the merits of Ethernet and Token Ring switching. We're going to eventually need more bandwidth, and switching is the answer."
>
> — Chez Tschetter, Iway Internet Services, Sioux Falls, S.D.

Proteon's new Ethernet switch is called the Client Server eXchange (CSX) 900ER. It offers 24 switched Ethernet ports, two 10/100M bit/sec. ports for links to servers, backbones and other switches as well as two ports for wide-area network links.

Although the price of the CSX 900ER is rock-bottom, it isn't without some frills. It uses application-specific integrated circuits to support a Rmon capability on each port.

Rmon is a widely accepted scheme for collecting detailed operational statistics from LAN devices linked to each switch port for use as part of a larger network management package.

"Rmon is going from a pricey optional feature to being on the standard features checklists that users carry when shopping for Ethernet switches," MacAskill said. "It's a differentiator, for now."

### Full support available

In addition to being Rmon-ready, the CSX 900ER supports bridging, Point-to-Point Protocol, IP and Novell, Inc.'s IPX through Proteon's OpenRoute core software.

Proteon also added its name to the fast-growing list of companies that offer Token Ring switches, with the introduction of the ProNet Client/Server eXchange 901T. It has 12 switched Token Ring ports and one expansion port.

Each of the ports can support 4M or 16M bit/sec. of switched Token Ring bandwidth in what is called half-duplex mode. In full-duplex mode, those figures are doubled. The switch costs $10,500 and will ship next month.

# PC platforms

CONTINUED FROM COVER 1

for simplicity from small support staffs who must cope with increased complexity.

One way to do this is by offering an alternative to a Unix workstation, which was previously the only system powerful enough to support the database and display demands of monitoring thousands of network devices.

Evidence of this trend emerged at the show from the following directions:

- **Digital Equipment Corp.** introduced the first enterprise-capable PC platform. This week, it will ship Polycenter Manager on NetView for Windows NT, a native 32-bit Windows NT implementation of the IBM AIX- and Digital Unix-based network manager.
- **IBM** is beta-testing the OS/2 version of SystemView, the console that blends the NetView network manager with other tools. It ships this quarter for departmental networks, followed by more powerful versions for OS/400 and MVS. One is also under development for Windows NT. Next year, IBM plans to link these diverse platforms for easier management of distributed networks.
- **Hewlett-Packard Co.** plans to unify Windows and Unix versions of its OpenView management platform on Windows NT and complete its Tornado distributed architecture during the first half of next year. The Tornado project is intended to revamp OpenView to scale across large, distributed networks.
- **Cabletron Systems, Inc.** demonstrated a Windows NT-adapted Version 4.0 of its Spectrum network management platform, due out early next year with a native version to follow. The Rochester, N.H.-based networking vendor also previewed its upcoming case-based reasoning tool, which will help operators at Windows NT or Unix consoles respond to trouble in complex client/server networks.

> "Bringing someone to Unix proficiency is a two- to three-year process, but I can comfortably let them run free in a matter of weeks on Windows NT — our server of choice."
>
> — IS chief at a U.S. Department of Defense nuclear regulatory agency

### Cost prohibitive

Users are rapidly outstripping the capabilities of current enterprise management products, said Jamie Lewis, president of The Burton Group, a network consultancy in Salt Lake City. The drive to build bigger and more complex client/server environments can often stall because the products have been too expensive to own, deploy and maintain, he said.

Digital is forcing HP and IBM to stop dragging their feet on demands for management from Windows NT, Lewis said.

At $6,995 — less than half the cost of equivalent Unix software — Digital's Polycenter Manager on NetView for Windows NT eases training by combining NetView's Motif graphical network interface with a Windows 95 style, said Bruce Webster, a Digital product manager. The server also integrates with Microsoft's System Management Server to assist administrators who seek a total Windows management suite.

Webster said a 90-MHz Pentium-based PC with 60M bytes of RAM handled as many as 5,000 managed objects in laboratory tests. Digital expects a version, due later this year, for its Alpha processors that will support even larger management databases.

One attendee, the information systems chief at a U.S. Department of Defense nuclear regulatory agency, was thrilled to hear of HP's plan to move OpenView to the Windows NT platform. "Go for it, because the less operating systems I have to maintain, the better," said the IS chief, who asked not to be named for security reasons. "Bringing someone to Unix proficiency is a two- to three-year process, but I can comfortably let them run free in a matter of weeks on Windows NT — our server of choice."

But a user of IBM's NetView for AIX said he wouldn't change for the sake of change. "The management application is more important than the operating system it runs on," said Michael Jenulis, support specialist at New York-based Teacher's Insurance & Annuity Association. "But given a choice of operating systems, I'd probably go with whatever is easiest and cheapest to use."

**Tivoli and Intel** ready products that manage Unix and PC systems from a single point. See page 15.

## Can SunSoft rise to the occasion?

Next week, SunSoft, Inc. in Mountain View, Calif., will attempt to clear up the confusion about the next level of its Solstice software — the successor that lets SunNet Manager address enterprisewide network management.

A collection of management applications, held together by the event correlation engine from NetLabs, Inc., seeks to provide much-needed scalability with centralized control.

Yet analysts and users question SunSoft's commitment and ability to deliver these features.

"I'd like to see them moving faster because a lot of users are skittish," said John McConnell, president of internetworking and management consultancy at McConnell Consulting, Inc. in Boulder, Colo. "They wonder if Sun is in for the long haul."

Roosevelt Giles, president of Atlanta-based systems integrator Information Management Systems, Inc., noted that "more than 30 of [my] clients moved off SunNet Manager to IBM NetView and [HP's] OpenView in the past year because they perceived Solstice as slideware."

SunSoft officials have pledged ongoing commitment to extend SunNet Manager beyond its popular use as an element manager.

*— Patrick Dryden*

# Intel, Tivoli tackle task of PC, Unix management

By Steve Moore

The user pipe dream of managing conglomerations of Unix and PC systems from a single point is starting to come true, as evidenced by integrated products due later this year from Tivoli Systems, Inc. and Intel Corp.

Key components of Intel's LANDesk family of PC systems management software have been integrated with Tivoli Management Environment (TME) enterprise systems and applications management platform (see chart). In a related move, Tivoli will make its previously Unix-centric TME run on Microsoft Corp.'s Windows NT operating system by year's end.

**User applause**

Users hailed the vendors' integration work. The ability to coordinate client/server hardware and software inventories with software distribution efforts "is one of the things we wanted from Tivoli," said Pam Wortham, a systems analyst at Florida Power Corp. in St. Petersburg, Fla. The utility already uses Tivoli and will use LANDesk with the Tivoli/Courier software distribution application, she said.

**Working together**

**Tivoli and Intel will combine Unix systems management and desktop systems management by the end of 1995. This will result in the following:**

- The Intel LANDesk Management Suite discovery agent software will be part of a forthcoming Tivoli inventory product
- The software installation technology in the LANDesk Management Suite will be incorporated into the Tivoli/Courier software distribution product
- Tivoli will ship its Tivoli Management Environment software running on Windows NT

Florida Power uses Tivoli/Courier to distribute a newly developed customer service application to 1,200 Windows NT systems. The application allows service representatives to access account information for customers.

The ability to combine desktop systems management with Unix systems management is something "the whole industry is looking for," said Chuck Masters, senior manager of systems, software and operations support at FedEx Corp. in Memphis. Masters said FedEx uses Tivoli, but it is looking at Microsoft's Systems Management Server for desktop management.

Analysts offered different views of the Tivoli/Intel alliance. The combination of workgroup and enterprise software management will be attractive to users and will allow Tivoli to "move from just Unix systems management into desktop management as well," said Paul Mason, a research manager at International Data Corp. in Framingham, Mass.

Mason said because Systems Management Server — a competitor of LANDesk — "is not seen as an enterprise product," Tivoli and Intel "are really bumping up against people like Novadigm that have mainframe-centric, enterprise-level software management products."

Systems management applications are very compute-intensive, so "they will run better and have higher performance on RISC-based platforms," said Frank Dzubeck, president of Communications Network Architects, Inc. in Washington.

Tivoli and Intel are strong proponents of the emerging Desktop Management Interface standard for managing client/server hardware and software resources, as are IBM and SunSoft, Inc. in their work on common agent software [CW, Sept. 25].

**Looking to integrate** frame relay and ATM? See page 71.

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# Multimedia ThinkPad line to rival features of desktop PCs

By Mindy Blodgett

IBM PC Co. this week will announce a new line of high-end, multimedia notebooks that it says are packed with enough features and ergonomic design to outpace most desktop PCs.

The desktop giant joins rivals Compaq Computer Corp. and Panasonic Personal Computer Co. in its bid to bank on the growing market for flashy, premium notebooks with television-quality video. Following close behind is Toshiba America Information Systems, Inc., which will soon announce a similar product, according to sources close to the company.

The IBM ThinkPad 760 series, available this week, will feature 12.1-in. screens, Motion Picture Experts Group support — the full-motion, full-screen video standard — and 90-MHz Intel Corp. Pentium processors. Notebooks with 120-MHz processors are due within the next several weeks once Intel ships the new chip, which was delayed due to a minor design flaw [CW, Sept. 11].

Pricing will range from $5,349 for the Model 760C, which weighs 6.1 pounds with a 10.4-in. screen, to $7,449 for the 7.4-pound Model 760CD, which includes a 12.1-in. screen and a removable hard disk drive.

**Pentium maximized**

Intel this week announced a Peripheral Component Interconnect chip set aimed at maximizing the performance of its Pentium processors for notebooks.

### New features

Reflecting the latest notebook trends, the 760 series also has some new ergonomic features, including a palm rest and a tilted keyboard.

"There is definitely a desire on the part of laptop users for more ergonomic features," said Alan Hedge, a professor in the Department of Design and Environmental Analysis at Cornell University in Ithaca, N.Y. "The manufacturers are becoming more aware of that."

The new IBM machines are valuable presentation and sales tools, according to one user.

Grant Erikson, director of Corporate Audio Video Services at Goodyear Tire and Rubber Co. in Akron, Ohio, said his company is migrating to notebooks from VCRs for presentations. He said one advantage to the 760 series is that the notebooks can be plugged in to televisions, sending images from the CD-ROM to the larger screen.

"I believe when you look at the mobile sales force of the future you will see them veering away from the traditional videocassette," Erikson said. "The new IBMs have a fabulous form factor."

But the high price of the premium notebooks will keep them relegated to a relatively small, specialized market, according to industry analysts.

Still, Randal Giusto, an analyst at International Data Corp. in Framingham, Mass., said with the new premium notebooks, IBM seeks to retain its edge as the industry's technical leader.

"But these prices, while somewhat aggressive, are pretty prohibitive," he said. "We believe that there will be more price compression in the market, bringing them from between $5,000 and $8,000, down to $4,000 and $6,000."

**AST introduces** new notebooks, too. See page 48.



**IBM ThinkPad 760 series**
(Model 760CD pictured)

- 90-MHz Pentium, with 120-MHz Pentium to follow
- Choice of OS/2 or Windows 95
- High-resolution active-matrix screen
- PCMCIA slots for two Type I/II or one Type III card
- Integrated infrared ports for wireless print and file transfers
- Up to 40M bytes of RAM

# Microsoft 'net offerings chase Netscape's lead

## Microsoft offers two Internet-related servers, Web server app for NT

By Stuart J. Johnston

**■ Microsoft Corp. made noises to show it is serious about the Internet last week, demonstrating a World Wide Web server application for Windows NT and describing two other Internet-related servers.**

But it may already be too late to catch up.

"Netscape is moving so quickly that it will be hard for Microsoft to catch up," said Michael A. Goulde, a senior consultant at Patricia Seybold Group, a market research firm in Boston. "By the time Microsoft is in the market, standards may be already set."

In his keynote speech at Networld/Interop '95 in Atlanta, Jim Allchin, senior vice president of Microsoft's business systems division, showed off a Web publishing server. Code-named Gibraltar, the server goes into beta testing in the fourth quarter. It is currently used on Microsoft's home page on the Web.

Allchin also described a second Windows NT Server application, code-named Catapult, that will provide a firewall between a private LAN and the Internet.

A third server application, which has no code name yet, will enable users to handle secure commercial transactions over the network. This business services server will use a new protocol specification, called Secure Transaction Technology, that Microsoft announced this week in conjunction with Visa International, Inc. (see Shorts, page 8).

Goulde said he believes Microsoft stands the best chance of succeeding with the business services server partly because of its ability to tightly integrate it with NT. Still, it is far from certain that Microsoft can achieve the imposing presence on the Internet that it enjoys on the desktop, Goulde said.

"I do believe it's not a market that Microsoft is going to dominate, [and] that's the question," Goulde said. "Are they going to be willing to play in a market where they're not going to be No. 1 or No. 2?"

Official ship dates haven't been announced for any of the Internet server applications.

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**Is Microsoft coming to the Internet party too late to make a splash? What are the chances its new server and browser products will ever catch up with Netscape? Sound off to us at talkback @cw.com. Please include your full name. We'll publish a sampling of reader opinions in an upcoming issue.**




*Microsoft's new browser ships with RealAudio Player, a program from Seattle-based Progressive Networks, Inc. that lets users peruse and hear sounds on-line*

## Microsoft upgrades Web browser

Microsoft last week unveiled an upgrade to its Web browser that includes several multimedia features and more advanced security than the first version, which shipped in August with the Windows 95 operating system.

Internet Explorer 2.0 was designed to let cybersurfers view video and three-dimensional graphics as well as hear audio while on-line. The product also supports the latest extensions to the Hypertext Markup Language, the lingua franca of the Web.

Users can obtain a beta-test version of the browser for free at http://www.windows.microsoft.com and other Web sites. The product runs only under Windows 95.

A final version of Internet Explorer 2.0 is due in four to six weeks, said Alec Saunders, a product manager at Microsoft.

*—Kim S. Nash*

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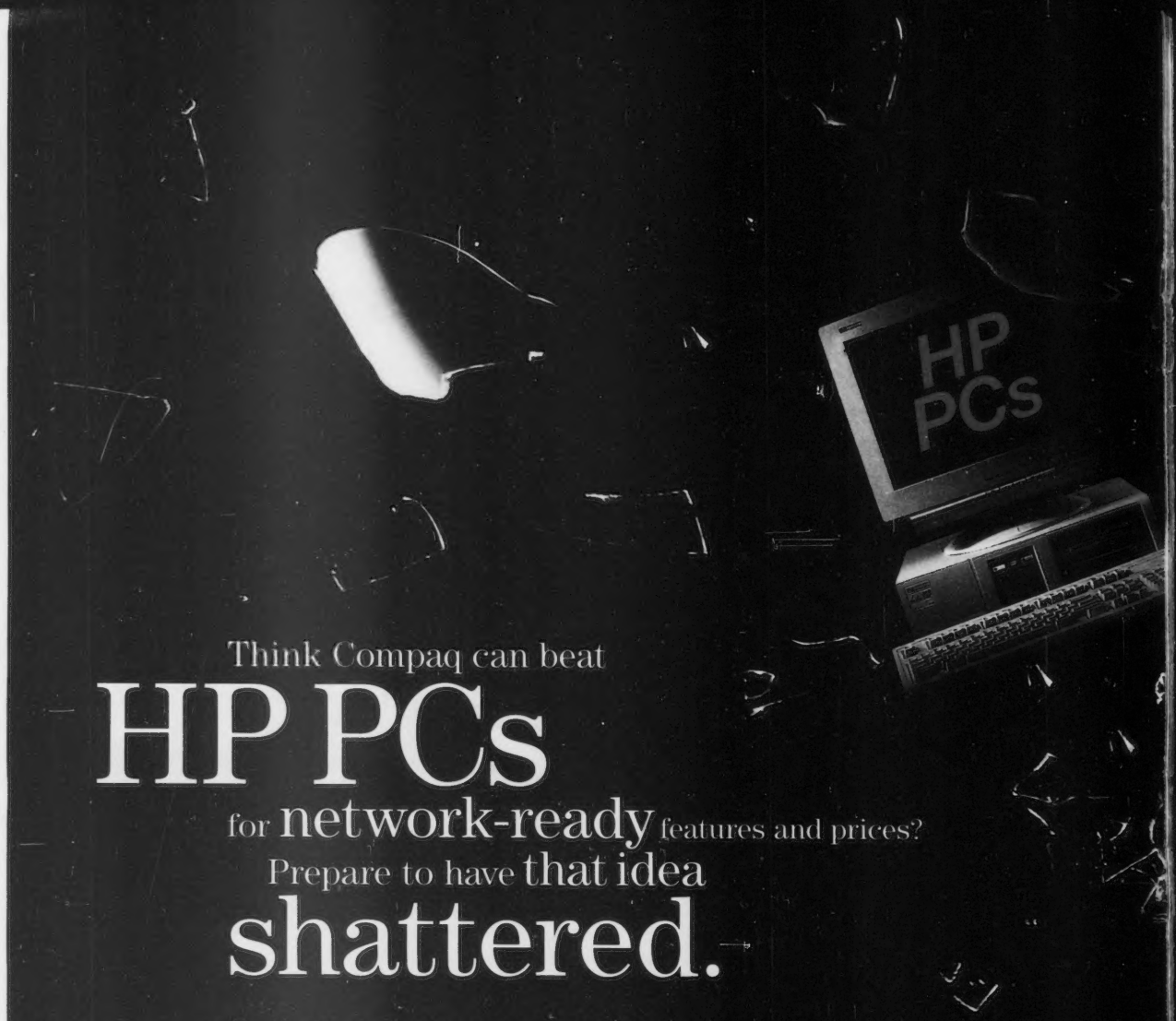



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HP mouse and keyboard. [1]Source 1994 J.D. Power and Associates PC Customer Satisfaction Study.SM Study conducted among business users and based on 1,528 user respondents. MS-DOS is a
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intel inside
pentium

# Net management info reaches Web

By Patrick Dryden
AUSTIN, TEXAS

Networking vendors and service providers are beginning to use the World Wide Web to deliver vital network management information.

Cabletron Systems, Inc. in Rochester, N.H., for example, is testing Web reporting for the next version of its enterprise network management platform. And NetSolve, Inc. is preparing a Web link to the data it gathers while managing customers' wide-area networks.

Far-flung support staff, department heads and anyone who needs to check network performance also could use these tools to get up-to-date data.

"The Web turns out to be an easy tool for a lot more people to view management information," said Blair Sanders, a senior technical staff member in charge of enterprise network architecture in the electronic communications group at Texas Instruments, Inc. in Dallas. The semiconductor manufacturer is eager to make such information "globally visible and easy to access" across its network, he added.

Sanders is testing Version 4.0 of Cabletron's Spectrum enterprise network management software, which is due early next year. Its distributed data manager will be able to update a Web server as one reporting option.

System administrators can now monitor CPU and memory usage if they know which files to pull up, Sanders said, but a Web interface would be much easier to use and understand.



CHARLES GUTIERREZ

**Telecommunications director** *David Freeland wants to open network data access to customers and field support staff*

The interface allows users to hit a Web server from any system equipped with Web browser software and see current statistics in graphical form without having to request and wait for reports. Currently, users require X Window System capability with access — and training — to run a management console.

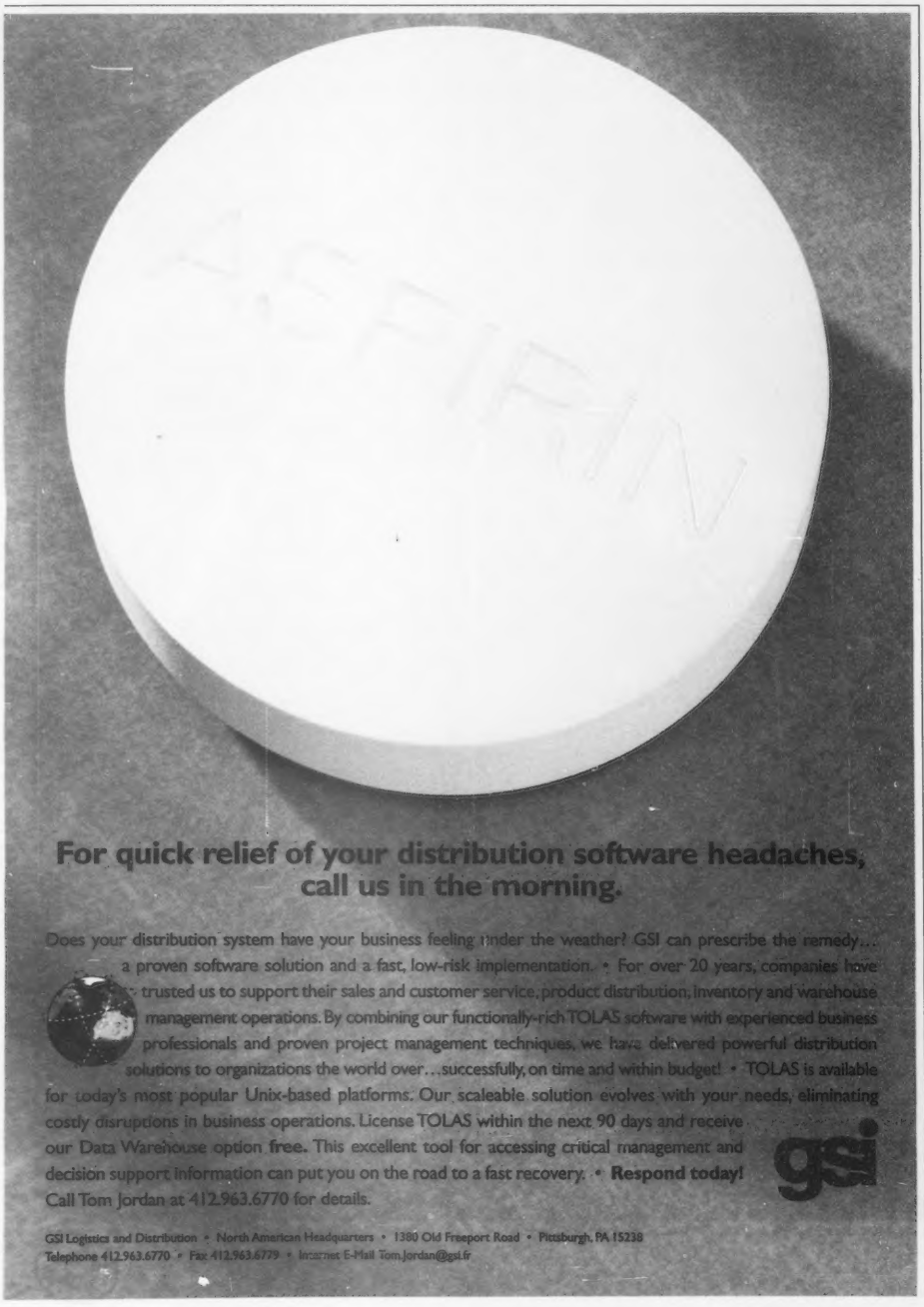
For the Texas Department of Human Services, the notion of using the Web this way is also appealing. "It's a good idea, a way we could open up our central network control data to customers and to more support staff in the field," said David Freeland, telecommunications director at the Texas Department of Human Services here.

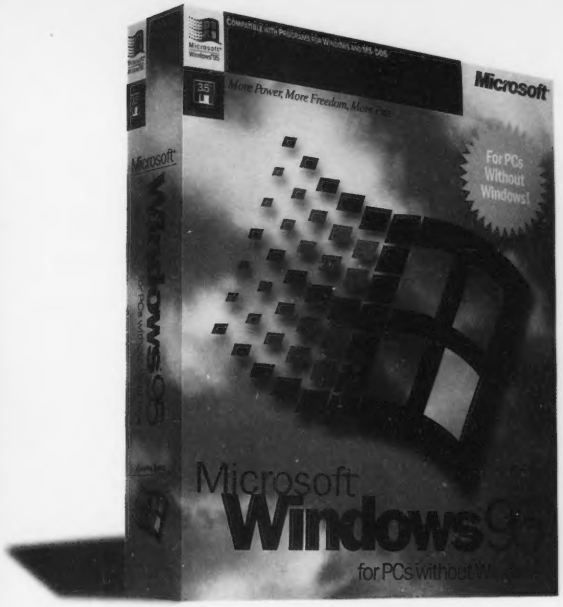
"Giving them access to status and performance information could make them more comfortable with what we're doing," Freeland explained. A Web server could also make reports about LANs supported locally or by outsourcers available to the central MIS group.

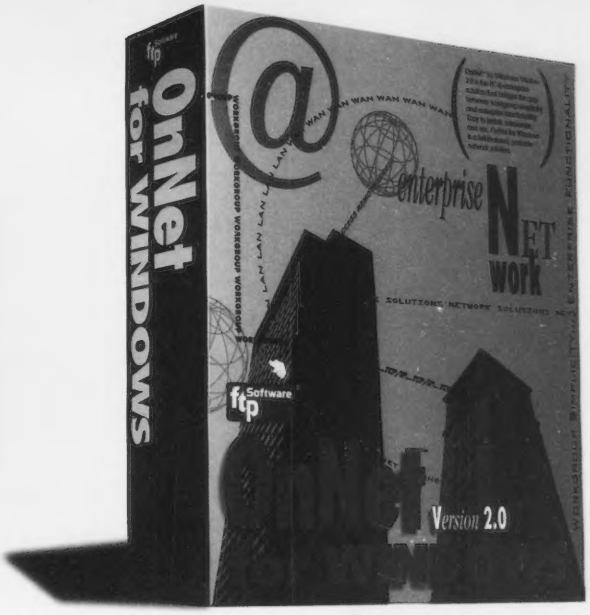
"We could do this ourselves, but I don't want to get bogged down creating nice graphics," he added.

One such option is ready to roll this fall from NetSolve, a wide-area network consultancy and management outsourcer.

NetSolve technicians support clients from the company's headquarters here using a separate network connection that eliminates the overhead of management traffic from the client's own wide-area network. This channel will provide a restricted link to a Web server, which acts as a front end to the database tracking the client's network.






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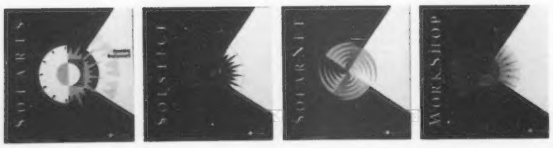
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# Global commerce network open for business

By Thomas Hoffman
NEW YORK

The Global Business Alliance, Inc. (GBA) last week launched a unique Windows-based electronic commerce service to help small and medium-size businesses find, qualify and negotiate partnerships with international businesses.

First announced in the spring [CW, April 3], International Business Exchange (IBEX) was designed to let subscribers launch electronic requests for profiles of potential partners through Sybase, Inc.'s intelligent agent software, according to Ian McLaren, executive vice president of SHL Systemhouse, Inc. SHL designed the system.

The software pinpoints potential partners across a myriad of industries via an IBEX database of more than 8 million worldwide business contacts.

**Expanding service**

IBEX is up and running in the U.S., Canada, Mexico and Australia, and should be distributed nearly worldwide by late next year, according to GBA Chairman Mady Jalinous.

Some of the eight partners of the Washington-based agency include SHL Systemhouse, AT&T Corp. and The Chase Manhattan Bank NA.

Jalinous estimated that IBEX could draw 1.5 million subscribers by the year 2000. Analysts agreed that given IBEX's global strategies and solid backing by industry heavyweights such as AT&T and Chase, GBA just might meet those goals.

The service could be a godsend for smaller businesses seeking distributors and venture capitalists in new markets, analysts said.

"Generally, a middleman or a trade intermediary might get a 20% cut of a sale — that's a pretty hefty commission," said Stan Lepeak, an analyst at Meta Group, Inc. in Stamford, Conn.

"For a small company like us, IBEX provides a great opportunity to tap new markets like Eastern Europe and the Pacific Rim," said Tess Morael, president of Axe Industries, Inc. The Arlington, Va.-based medical equipment exporter currently ships most of its gear to the Middle East and South America.

**Pros and cons**

Potential customers and analysts have good reasons to tout IBEX, including its relatively low cost of entry — a $250 registration fee and a pay-as-you-go transaction service that runs about $5 a pop. Still, there are a few gotchas.

IBEX subscribers must use AT&T Mail or General Electric Information Services (GEIS) networks to access the service. Odds are very low that IBEX will be opened up to Prodigy, America Online or other commercial services, according to Jim Cunnie, business planning and development director at AT&T.

However, GEIS plans to provide Internet access to IBEX subscribers through its networks at a still-undetermined date, according to Gary Downs, an account executive at the Rockville, Md., services unit.

Critics cited other IBEX issues. "What if I don't want to settle my accounts through Chase?" asked Land Grant, president of the National Association of Export Companies, a New York-based user group of 400 U.S. intermediaries and exporters.

"I'm all for information technology, but there's a lot of fear and loathing among these [GBA] partners," Grant said. He is concerned that the service may be harmful to the livelihoods of intermediaries.

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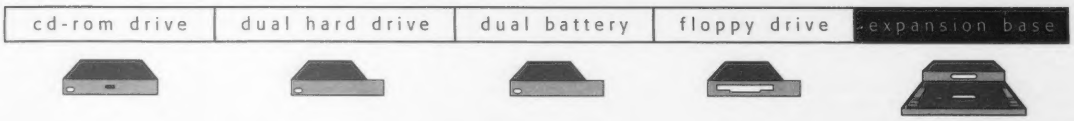
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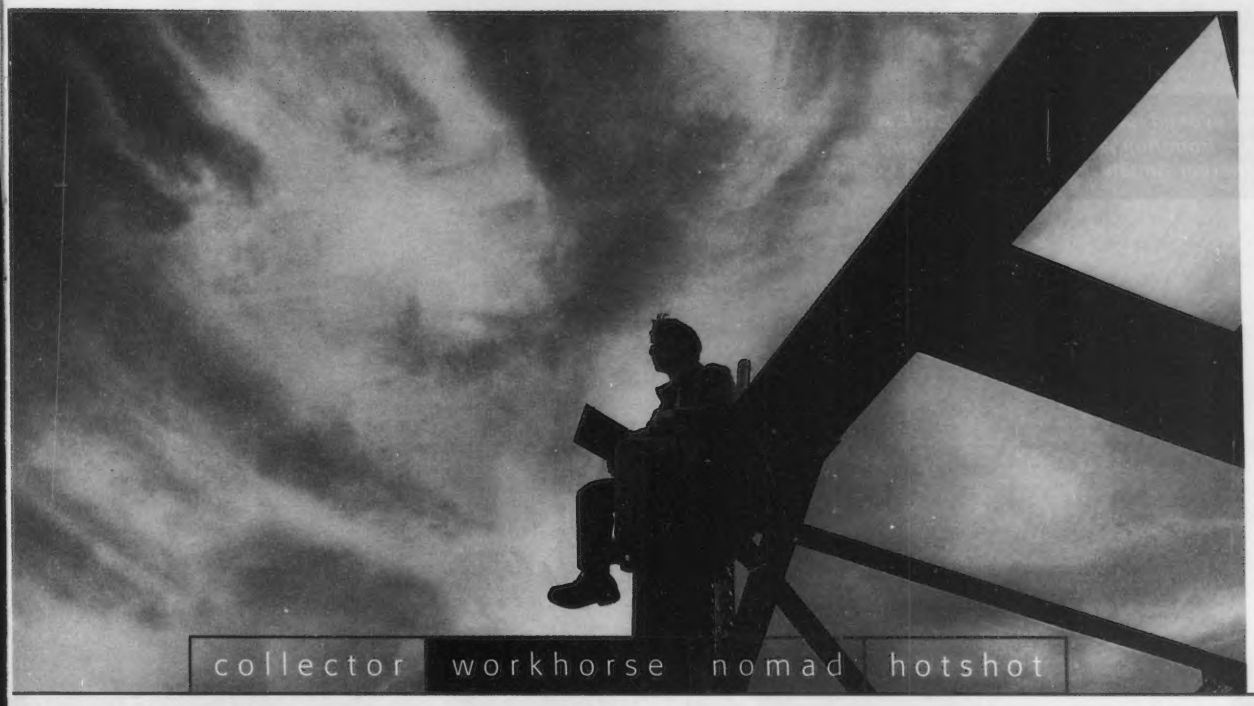
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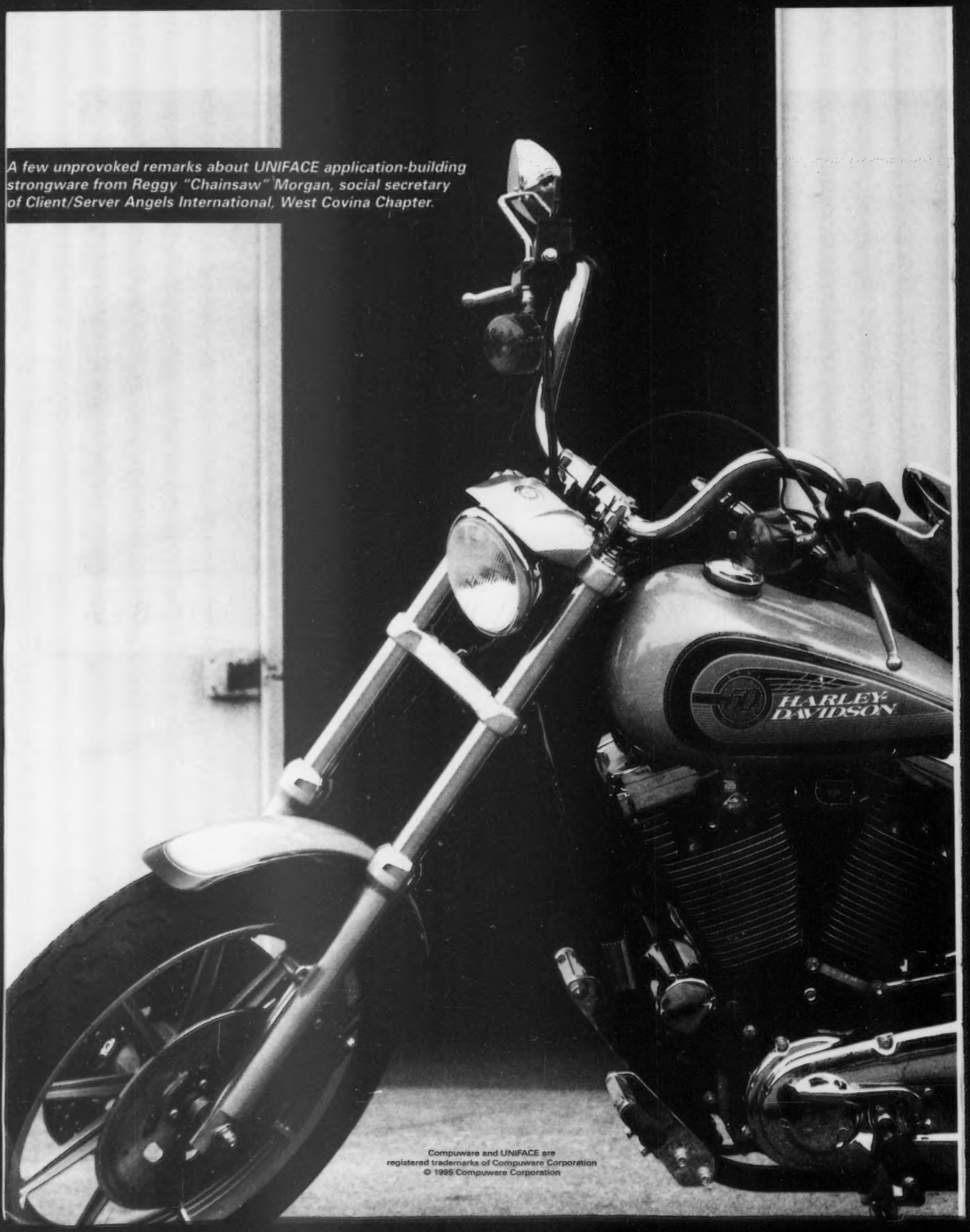

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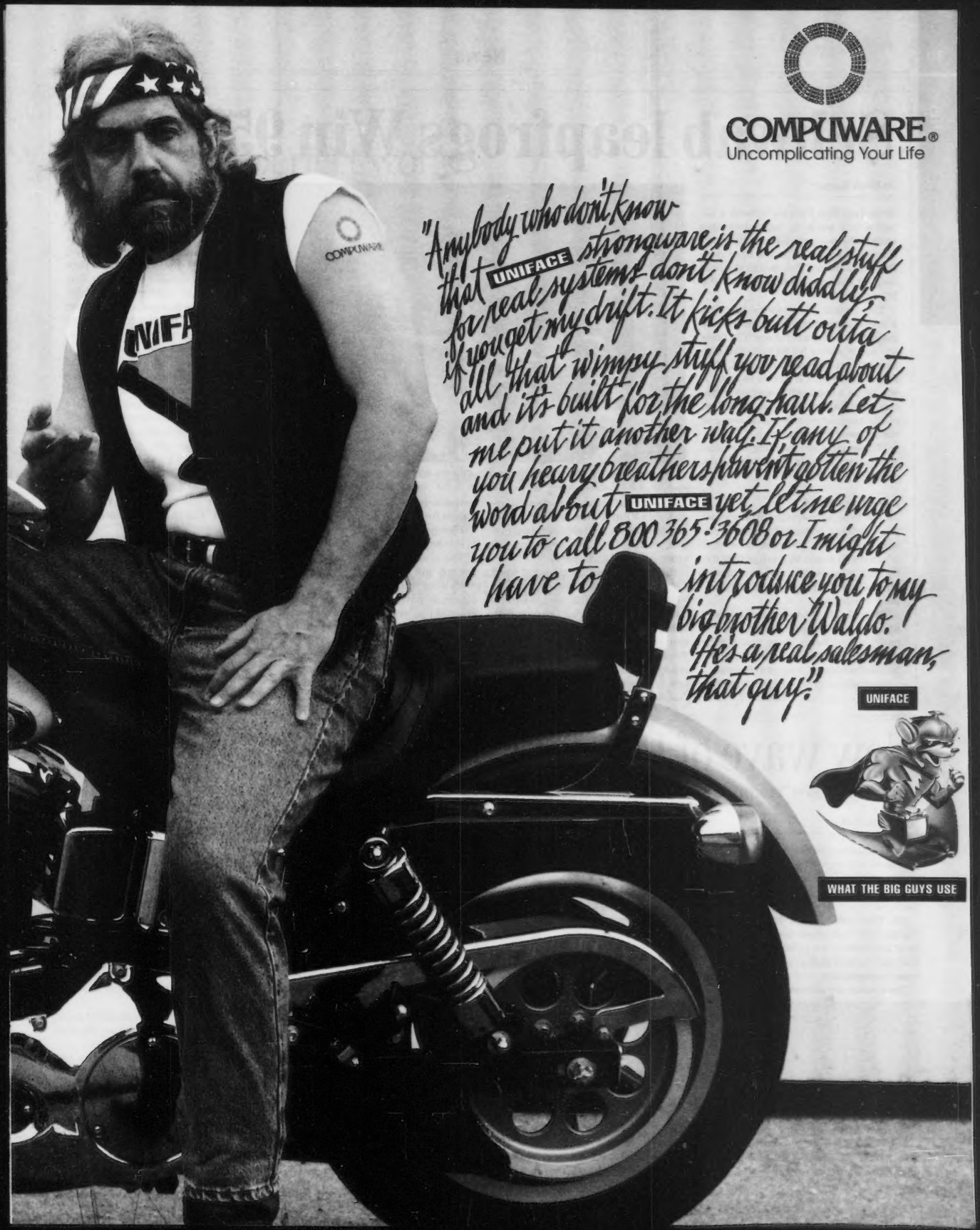
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UNIFACE
WHAT THE BIG GUYS USE

# Schwab leapfrogs Win 95 to NT

By Mitch Wagner

Brokerage firm Charles Schwab & Co. plans this week to begin installing workstations running Microsoft Corp.'s Windows NT in 200 branch offices nationwide. This marks the final stage of a yearlong deployment of 6,000 NT workstations.

The rollout also marks the first traces of a trend expected to accelerate among financial institutions. The firms will use Windows NT for high-end, mission-critical applications, and if they install Microsoft's Windows 95 at all, it will be as a commodity operating system, said Raphael Benabou, president of RB Associates, a financial services consultancy in Manhasset, N.Y.

"These guys are vaulting over one generation," he said of the Schwab decision.




**Charles Schwab** *is rolling out NT workstations to 5,000 sales reps nationwide*

### Looking ahead

As the hype surrounding Windows 95 grew, Schwab consulted with sources within Microsoft and concluded that Windows 95 would be a temporary fix. By 1997, Windows 95 would be replaced on desktops by Windows NT, the company concluded.

"Why should we do a transition now and then do one again in a year and a half?" asked Betsy Snow, senior vice president for distributed implementation and customer support at Schwab.

Megan Bliss, group product manager for Windows NT workstations at Microsoft, said NT and Windows 95 will actually merge into a single operating system, rather than one replacing the other, in two to three years.

In total, Schwab is providing some 5,000 sales representatives with NT workstations. Until this year, those employees had been using Quotron Systems, Inc. dumb terminals to access corporate information on mainframes. The move to NT is intended to give sales representatives quicker access to customer account information on the mainframe as well as to news feeds and quotes from Reuters news service.

Deployment of the NT workstations is also key to Schwab's business plan.

The company tries to saturate the country with personnel to give customers a local presence. "We use the small offices to have brick and mortar and maintain a presence in even small towns," said company spokesman Tom Taggart.

Yet Schwab also wants to keep its staffing levels down. The company has just 7,000 employees, and it spreads its people out over branch offices nationwide.

The decision to go with NT followed a false start Schwab made last year when it deployed 1,000 Sun Microsystems, Inc. workstations. But the company found that the applications its employees needed were more often on Windows than Unix. "Either they didn't exist or they were more expensive or they existed first in the Windows marketplace and in Unix three to six months later," Snow explained.

Another factor in the commitment to Windows NT was the desire to standardize on commodity applications where possible. "We wanted to use commodity software where it's available, and the commodity software is in Windows," Snow said.

Yet Windows 3.1 was too unstable to run mission-critical sales applications, she added, so Schwab began casting around for alternatives. The company looked at, and then eliminated, Unix and OS/2.

The brokerage started its NT migration late last year with a pilot project in about a dozen of its 210 small branch offices. Next, the company installed NT in its four regional call centers.

Schwab plans to install NT workstations in the remaining branch offices by December.

**Experts tell how** to defend against information attacks. See page 71.

# New wave of PC viruses no prank

## 'Macro viruses' reappear in Microsoft Word

By Gary H. Anthes

Hope that a new and potentially dangerous class of computer viruses — called macro viruses — would remain nothing more than a laboratory curiosity seems doomed.

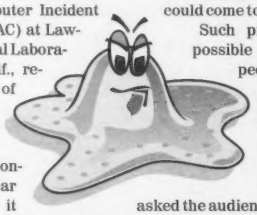
The first such virus to be discovered "in the wild" last month has been joined by at least two more, prompting worries that the easily written programs may become commonplace.

The viruses are macros, or executable code, that ride in documents created by Microsoft Corp.'s Word running on Windows, MS-DOS or Macintosh platforms. The macros are executed by Word when the infected document is opened [CW, Sept. 18].

Microsoft dismissed the first such virus, known as WinWord.Concept, as a harmless "prank" but is now taking the threat seriously.

The Redmond, Wash.-based software giant said it will release this week a free upgrade to Word that warns users of a virus threat if the document they request contains any kind of macro. At that point, the user can open the file as is, open it without the macro or leave the file alone.

Last week, the Computer Incident Advisory Capability (CIAC) at Lawrence Livermore National Laboratory in Livermore, Calif., reported the discovery of another macro virus, dubbed WordMacro.Nuclear.



Unlike WinWord.Concept, WordMacro.Nuclear delivers a payload. If it runs on any April 5, it will delete your command.com file. And if you print a document during the last five seconds of any minute, it will print, "And finally I would like to say: STOP ALL FRENCH NUCLEAR TESTING IN THE PACIFIC."

According to CIAC team member William J. Orvis, the "nuclear" virus currently seems concentrated in Europe. "It concerns me that this may be a new wave because these viruses are so easy to write," he said.

"This opens up a whole new field of dreams for virus writers," said David Stang, chief technical officer at Norman Data Defense Systems, Inc. in Fairfax, Va. "In three years, this kind of virus could come to dominate."

Such proliferation would be possible because many more people are able to write macros than write assembler, the traditional language for viruses, Stang said.

When "Virus Bulletin" editor Ian Whalley asked the audience at a recent virus conference in Boston how many people had seen WinWord.Concept on PCs in their organizations, roughly 10% raised their hands. "Wow, that's a lot," Whalley exclaimed.

Security consultant Harold Highland said he had seen WinWord.Concept on PCs at a federal agency, which he declined to name. And Sarah Gordon, a security analyst at Command Software Systems, Inc. in Jupiter, Fla., said a customer last week reported WordMacro.Nuclear on 200 PCs. "This is a new virus, so that's pretty quick spread," Gordon said.

Yet Peter Tippett, president of the National Computer Security Association (NCSA) in Carlisle, Pa., said he wasn't impressed by Microsoft's new macro detection device. Warning users that a virus may be present "is something we did seven years ago for regular viruses, and we decided it didn't work," he said.

Still, experts said there is little more Microsoft can do about macro viruses, short of embedding its own virus scanner in the operating system — something it once did in MS-DOS. They advised users to scan documents and software files but noted that could take considerably more time.

Some observers warned against panic, saying it is just too soon to say whether macro viruses will sizzle or fizzle.

"We have this new kind of virus, and we need to learn more about it," said Richard Ford, research director at the NCSA. "Maybe we'll see just three of these, and that will be that."

**Hibernia National Bank** moves from ancient technology to NetWare 4.1. See page 71.

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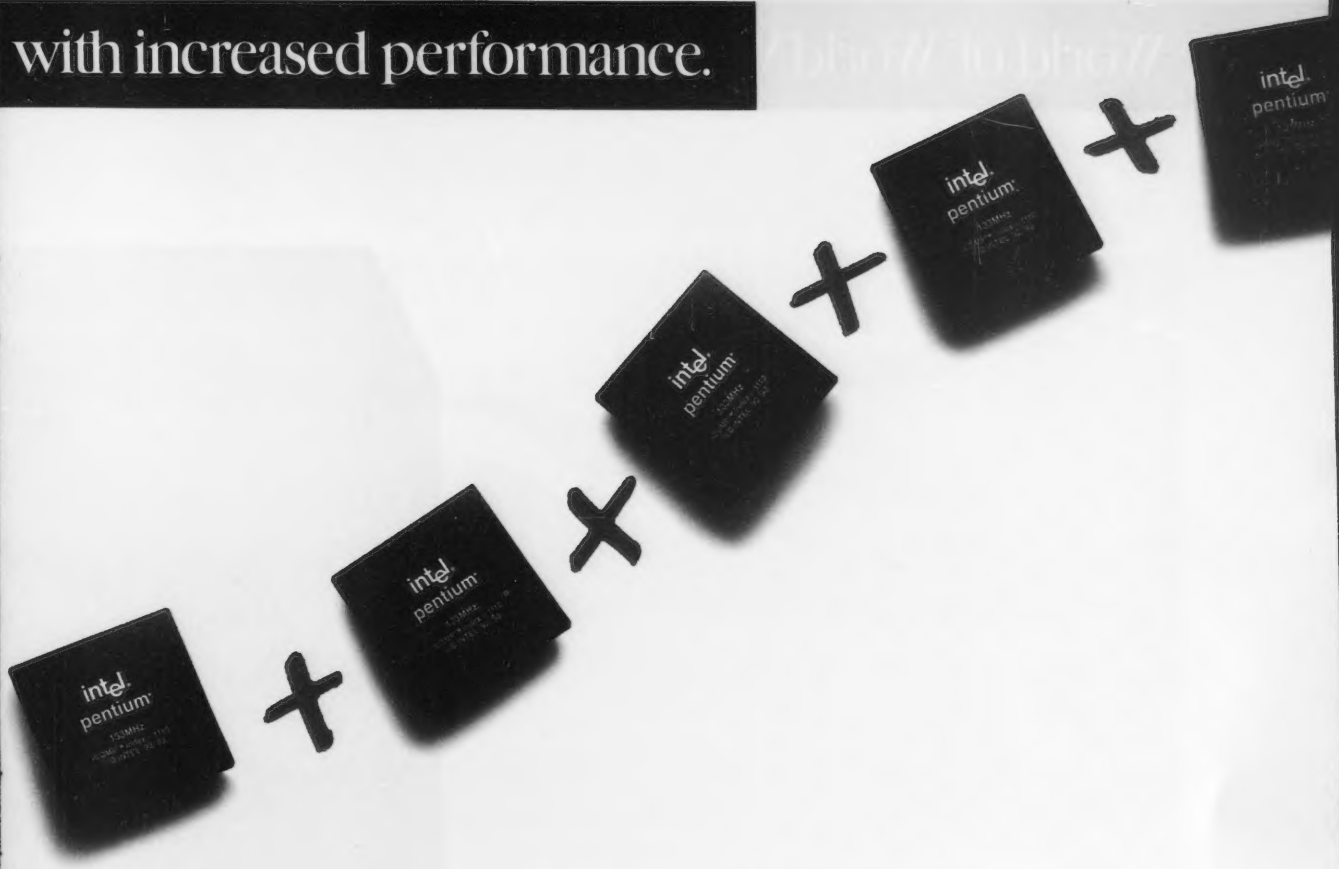
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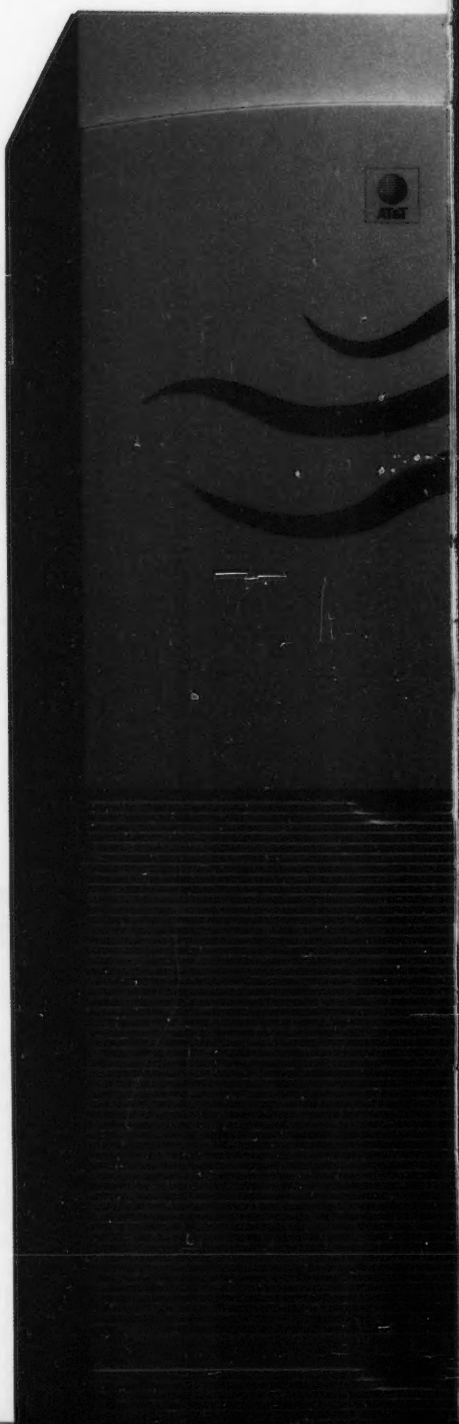

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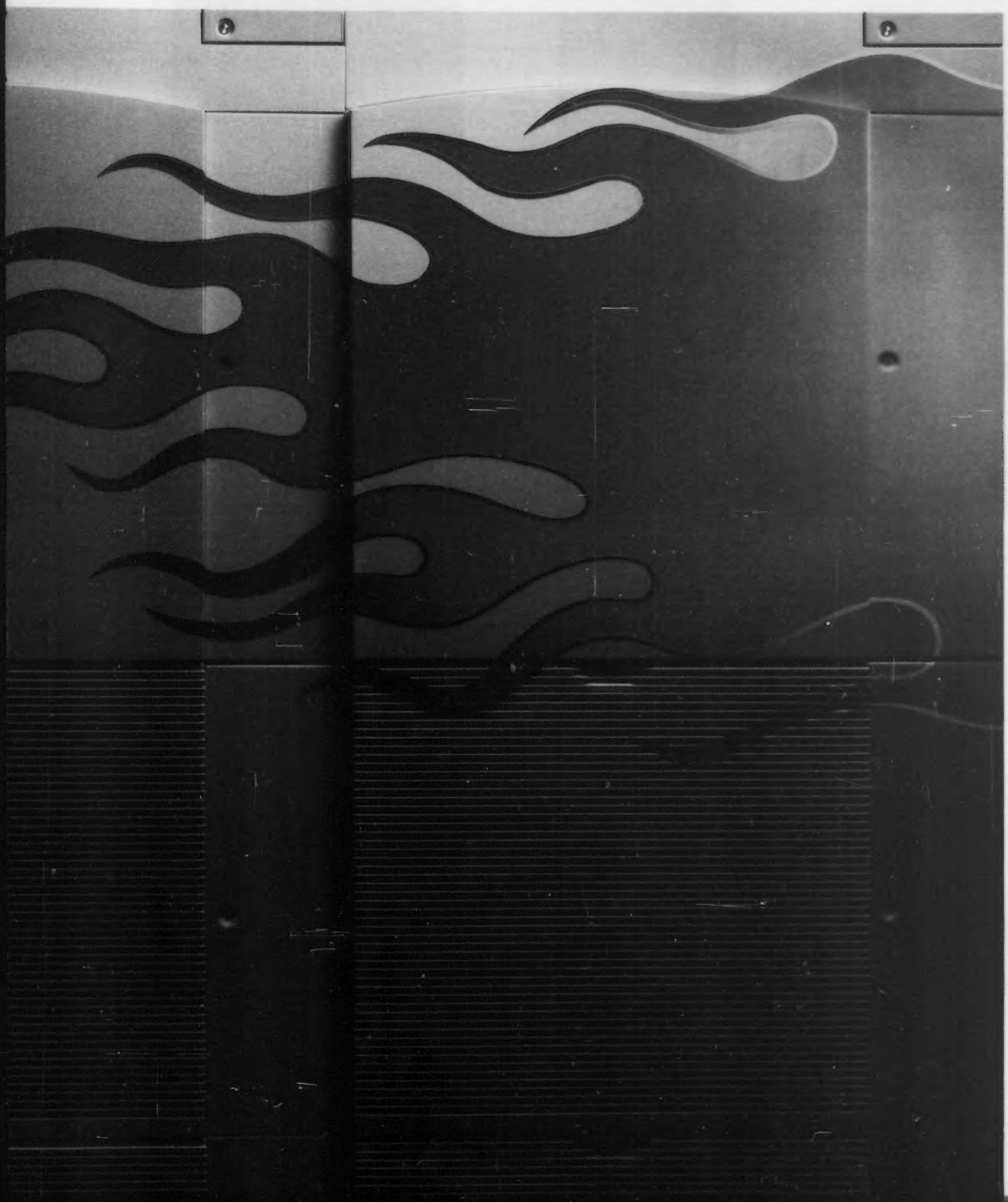
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- Hot pluggable disk drives and fans
- Redundant power supplies
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- Optional AT&T LifeKeeper Switchover FRS
- Fully upgradable to a 5100C (Cluster) or 5100M (MPP) configuration

### AT&T WorldMark 5100C Cluster Configuration

- Clustering of 2 to 8 processor subsystems
- 1 or 2 processor subsystems per 5100C cabinet
- 4 to 32 90MHz or 133MHz Intel Pentium processors per processor subsystem
- Upgradable to next generation Intel processor family (P6)
- 4 MB second-level cache per processor
- 32 MB Limited Address Range Cache per processor board
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- Up to 7 LAN and 24 WAN connections per processor subsystem
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# Computer Industry

## Chip slip, 486 dip lower AMD numbers

By Jaikumar Vijayan

It seems like the chips are stacking up against Advanced Micro Devices, Inc.

In a double whammy last week, the Sunnyvale, Calif.-based chip maker said it will delay its next-generation K5 Pentium clone until well into next year. At the same time, AMD warned investors to expect lower revenue and earnings in the third quarter, compared with the second quarter.

This is the second time AMD has delayed the chip since it was announced last October. Originally, the K5 was expected to ship in volume by the third quarter of this year.

For users, K5's delay means that mass-volume — and possibly less expensive — alternatives to Intel Corp.'s Pentium-based systems will be very limited, at least until the end of next year.

AMD blames flat 486 sales amid plummeting unit prices for its negative prognosis for this quarter. It attributed the latest K5 delay to the processor's inability to run standard X86 software.

"The fact is, we spent a little more time wringing out all compatibility issues with X86 software than we had anticipated," a company spokesman said.

### Intel's adverse effect

Intel's relentless Pentium price cuts have not only cut into 486 sales but also dramatically pushed down the average selling price of the chip.

"AMD was banking on the assumption that 486 prices wouldn't fall this much and that they could increase 486 production enough to overcome any fall in prices," said Tony Massimini, an analyst at Semico Research Corp. in Phoenix.

This is also why another delay in bringing out a Pentium rival could financially set back AMD over the next year or so at least, analysts said. To succeed, AMD must not only rival Pentium performance but also substantially lower its chip prices.

But the chances of that happening next year are remote, analysts said. By the time AMD starts volume shipment of its first 75-MHz K5-class chip sometime in the third quarter next year, the mainstream corporate market will have moved to much faster and higher-performance 150- and 166-MHz Pentium chips. Analysts said they expect that systems based on these processors will sell for prices averaging a mere $2,000, or the cost of fully loaded 90- and 100-MHz Pentium systems today.

AMD's production economics don't help either. Next year, the company plans to sell a mere 3 million Pentium-class chips. This is nothing compared with the roughly 45 million Pentium-class chips Intel expects to sell next year.

This means AMD simply won't have the economies of scale that have helped Intel maintain its vice-like grip on the chip industry.

**Has seen its day**

AMD's fortunes have been closely tied to the success of its 486 clone chips, but the 486 market has seen a rapid decline in shipments and revenue




Source: Semico Research Corp., Phoenix

## Briefs

### Cheyenne revamps

**Cheyenne Software, Inc.** is restructuring into three divisions that will focus on Novell, Inc. NetWare, Unix and Microsoft Corp. Windows NT platforms. Chief Executive Officer Reijane Huai said the company derives 90% of its revenue from the NetWare market but plans to move aggressively into Unix and NT storage management markets. Several new products for the three platforms will be released before the middle of next year.

### Cognos sales up

**Cognos, Inc.** reported a profit of $4.6 million for its second quarter ended Aug. 31, more than doubling the $2.1 million profit recorded for the same period last year. Sales rose from $40.5 million in its second quarter of 1994 to $48.5 million.

### To the Nines

**Quarterdeck Corp.** has acquired StarNine Technologies, Inc. in a stock swap valued at almost $13 million.

## Netscape enters proving phase

### Internet developer targets enterprise but needs to reassure IS on security

By Kim S. Nash

Netscape Communications Corp. has begun a pilgrimage toward the information systems enterprise with a series of products expected to carry the company beyond its end-user-oriented roots.

To play in the big leagues, the Mountain View, Calif.-based Internet software maker must convince corporate IS managers that the as-yet-unprofitable company will get there in years to come. But a recent handful of well-publicized security flaws in Netscape's products isn't exactly soothing potential customers worried about whether the on-line world is safe for business.

"This kind of thing could scare people about the Internet," said Michael Karlin, president of Security First Network Bank, an Atlanta-based bank created to conduct business solely over the Internet starting next month.

"Netscape is going through some growing pains, most definitely," said Scott Randall, general manager at NECX Direct, a Peabody, Mass.-based on-line vendor of computer hardware and software. NECX uses Netscape World Wide Web servers.

"But I don't doubt they'll pull through," Randall said, adding that the company's product plans show promise.

Indeed, 1996 is expected to be a key year for Netscape. Its blueprints include a string of software announcements designed to appeal to IS groups looking to build internal Webs, or so-called intranets (see chart).

Other plans up Netscape's sleeve include the pending acquisition of Collabra Software, Inc. [CW, Sept. 25]. The deal, due to close by February, would provide Netscape with workgroup and electronic-mail features to pit against groupware leader Notes.

In addition, a strong partnership with Sun Microsystems, Inc. gives Netscape clout. Sun's Java programming language is the basis for some of Netscape's forthcoming Web development tools. And Navigator 2.0, an upgrade to Netscape's browser that is now in beta testing, supports Java.

Security problems, meanwhile, may start to dog Netscape. In the past two months, hackers have uncovered at least three flaws in the encryption technology used in Netscape products that pose security risks to users.

To its credit, Netscape has handled the glitches openly, with explanatory information and fixes promptly posted to its Web site, Karlin said.

So far, business hasn't slowed, said Hank Nothaft, chief executive officer of Concentric Research Corp., an Internet service provider that resells Netscape software.

**Netscape's dreamscape**

This young Internet company plans to move beyond its consumer-oriented roots and bust into the corporate enterprise with new products due in December

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|---|---|---|
| LiveWire | Application development tool kit for building Web applications | Less than $500 |
| LiveWire Pro | An extended version of LiveWire, with utilities for linking Web applications to existing relational databases, such as those from Informix and Oracle | Less than $1,000 |

**Browser beware**

Last week, the third and most recent security problem was detected in Netscape software. Netscape's Navigator browser apparently lets users type in command strings that are too long, according to a post on the Cypherpunk's E-mail list. That means ne'er-do-wells could add malicious code to the command space, and the faulty code could damage or crash programs, the post said.

**New Web service providers.** See The Internet Page, page 76.

# Unix rebooted

**Last week I wrote about AT&T getting back to its networking and communications roots with a massive restructuring and downsizing. The refocusing bug is catchy, and Novell is the latest to come down with a case of back-to-the-roots flu.**

In practically giving away its rights to the Unix operating system and abandoning huge ambitions to develop an all-in-one network operating system, Novell's management is doing the right thing by its customers.

Unix is like a deeply held religious belief. You either have the spirit or you don't; there's no pretending. Under its former management, Novell had a vision that it could develop different network operating systems for different needs. Later, that vision mutated to that of the super network operating system, or an all-in-one operating system. Novell had the vision, but it didn't have Unix religion.



Now Novell has passed the Unix chalice to true believers, such as SCO and Hewlett-Packard, vendors whose names are synonymous with Unix.

More importantly, Novell now has an attainable vision: to be better than anyone else at combining not only NetWare but also Unix and Microsoft's Windows NT into a unified, Internet-ready client/server network. As any corporate user will readily attest, a product strategy that helps unite heterogeneous networks is bound to be beneficial.

The Unix portions of Novell's product offerings will come from Unix providers. Customers have valid and pressing concerns about just how well they will be able to combine NetWare LANs with Unix application servers. If Novell can't act quickly with its new, arms-length Unix partners and show significant progress in this area, then Microsoft will deserve every point of market share it will no doubt gain from sales of NT.

The Unix vendor community has a big piece of its survival at stake by working with Novell to build NetWare functionality into Unix products. For Novell, the opportunity is to shed the unfair critique of its competitors, which are always quick to say of NetWare: "All it does is file and print."

Bill Laberis

Bill Laberis, *Editor in Chief*
Internet: *bill_laberis@cw.com*




## An enlightening event

When my wife Lara went into labor with our second child Aug. 24 — two weeks early — I drew on my sense of humor to help calm things down. "This is great," I said. "Our son and Windows 95 will both be released on the same day!"

We arrived at the hospital safely, and a midwife in the delivery room began asking my wife about her condition and keyed in the data on a bedside computer. I was particularly pleased to find that the computer was a 386SX PC running a DOS application. A nurse attached fetal monitors to Lara's belly to make sure the baby was well. The data from the monitors was fed to that same PC, where another DOS application plotted it in two line graphs. Those were displayed on the screen in the room and on a screen at the nurses' station. The nurse didn't seem troubled at all by the lack of a mouse and a Windows interface.

I've been using Microsoft's Windows 3.1 since it was released, and I'm not about to give it up lightly. But maybe I won't buy that Windows 95 upgrade after all. Frankly, my small company just doesn't need it.

By the way, Lara delivered a healthy 8-pound, 6-ounce boy whom we named Stewart.

*Steve Wilent*
*Rhododendron, Ore.*
*71572,453@compuserve.com*

## Microsoft misses

We use a lot of Microsoft products here, and they are probably the worst designs I have ever used. But because of superior marketing and stunning application of the Peter Principle, they become market leaders.

Microsoft likes to think it knows how I want to use my system; it is generally wrong. I have been a programmer for 15 years on everything from PCs through mainframes, and I want the power and flexibility to do what I want and in the manner I want to do it without the interference of the application or the operating system.

As the rest of the world discovers 64 bit, it's about time Microsoft figured out how to make its little corner of the globe 32 bit. Wake up, Microsoft — you're on the trailing edge of technology. Consumers deserve better.

*Ric Messier*
*RAM Consultants*
*Enfield, N.H.*

## OS/2 clear winner

Regarding "Win 95 bests OS/2" [CW, Sept. 11], OS/2 has *never* claimed to support Microsoft Windows 95 applications. And yes, some games won't run properly under its Windows support. However, if all you do is run games, you don't need a true operating system such as OS/2. A graphical user interface (GUI) such as Windows is all you need.

If you type MODE CO80 at the "It is now safe to turn off your computer" prompt when Windows 95 ends, you will also find yourself at a DOS prompt. Windows 95 is nothing more than a GUI interface sitting on top of good old DOS.

By the time you ramp up your hardware to run Windows 95, you could just as easily install OS/2 and be better off.

*John W. Zerkel*
*Plano, Texas*

## What it all means

Your definition of Maintenance Release ["Win 95 explained," CW, Aug. 28] reminds me of terms commonly used where I work:

**Alpha test:** test of new, bug-infested software during software development. User works for the software developer. User doesn't pay for the software.

**Beta test:** test of new, bug-infested software. Performed after software development but before commercial release. User doesn't work for the software developer. User doesn't pay for the software.

**Gamma test:** test of new, bug-infested software. Performed after commercial software release. User doesn't work for the software developer. User pays for the software.

*Ron Fox*
*Chicago Osteopathic Health Systems*
*Olympia Fields, Ill.*
*RonWFox@aol.com*

■ Computerworld welcomes comments from its readers. Letters should not exceed 200 words and should be addressed to Bill Laberis, Editor in Chief, Computerworld, P.O. Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax number: (508) 875-8931; Internet: letters@cw.com. Please include an address and phone number for verification.

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90. Other Titled Personnel

**3.** Do you use, evaluate, specify, recommend, purchase: (Circle all that apply)

Operating Systems
(a) Solaris (e) Mac OS
(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep

App. Development Products ❑ Yes ❑ No
Networking Products ❑ Yes ❑ No

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**3.** Do you use, evaluate, specify, recommend, purchase: (Circle all that apply)

Operating Systems
(a) Solaris (e) Mac OS
(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep

App. Development Products ❑ Yes ❑ No
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*Gary H. Anthes*

# Hollywood puts hackers on pedestal

"There is no 'right' and 'wrong' — just 'fun' and 'boring,' " said one of the title characters in *Hackers*, the latest flick to glorify cybercriminals.



**The movie sends the wrong message, suggesting "their only crime was curiosity."**

Actually, the movie's pimpled purveyors of PC pandemonium weren't unconditionally glorified. One was certifiably mad. Another was knocked off the Internet when he was grounded for smoking pot. Another was chided by his mother for not having a girlfriend. "I'm still a virgin," he said defiantly, after spending all night embracing his computer.

Despite this silliness, the hackers emerge as heroes, and that isn't good.

*Hackers* is the story of a three-way contest involving high school computer punks, corporate security officials and the U.S. Secret Service. You won't be surprised to learn that the corporate guys are portrayed as ruthless money-grubbers, the Secret Service as bumbling buffoons and the hackers as electronic cowboys boldly taming the cyberfrontier.

The term "hacker" is so broad as to be almost meaningless. It is used equally to describe the innocent student who stays up nights surfing the 'net and the former KGB agent who is stealing money electronically from your bank. It is one thing to admire the persistence and ingenuity of these people; it is quite another to endorse the "your system is fair game" attitude of many of them, including those in the movie.

At a recent conference on information warfare, the National Computer Security Association (NCSA) brought in several hackers — "Erik Bloodaxe," "Emmanuel Goldstein," "Koresh" and others — to address button-down corporate security folks.



**Kate (Angelina Jolie) and Dade (Jonny Lee Miller) are renegade computer geniuses** *involved in a high-stakes industrial conspiracy in United Artists' fast-paced cyberpunk thriller,* Hackers

That didn't sit well with some. In a letter to the association, one computer security expert called the NCSA "highly unprofessional for giving aid and comfort to the convicted computer criminals that are the enemies of our clients and employers."

But in general, the audience didn't see the conference as glorifying hackers. Indeed, it didn't. The audience was fascinated by the hackers' presentations, and several said they had learned useful things from them. One can study a phenomenon without endorsing it, they rightly concluded.

Which brings us back to the movie. As entertainment, it isn't bad, with a decent plot, stunning graphics and lots of excitement. One might even learn something useful from it about the hacker's modus operandi. But its content and advertising copy — "Their only crime was curiosity" — sent the wrong message, a signal that "anything goes" in cyberspace.

The three movies previewed before *Hackers* at my theater all paid homage to crime and violence, with scene after scene glorifying drugs, money, sex and various exploding objects.

With that kind of Hollywood, I guess we shouldn't be surprised by films like *Hackers*.

Parental guidance suggested.

Anthes is a senior editor at *Computerworld*. He covers computer security issues. His Internet address is ganthes@mcimail.com.

*Harris N. Miller*

# Whoa! Flat tax favors the Rust Belt

Filing tax returns by postcard? When an idea sounds too good to be true, it probably is. That is certainly the case with current tax-reform proposals in Congress. In fact, the leading proposals for a value-added (VAT) or flat tax, as currently structured, could pose serious problems for the U.S. information technology industry.



**Whether it's flat or VAT, tax reform could cost high-tech industry a bundle.**

Consider the USA Tax proposed by Sens. Pete Domenici (R-N.M.) and Sam Nunn (D-Ga.). Under this particular VAT plan, capital and equipment expenditures would be fully deductible, but deductions for wages and employee benefits would be eliminated. The loss of deductions for wages and benefits would be partially offset by a reduced corporate tax rate and a credit for payroll taxes.

**The Domenici/Nunn VAT plan could raise the tax burden for high-tech companies by 50% or more.**

The resulting tax increase, however, still would be dramatic for companies in labor-intensive industries, particularly high-growth, high-wage industries such as information technology. The tax burden of many high-technology companies would rise by as much as 50% — and even more for high-tech companies in the service sector.

Another problem is that these tax systems tend to favor equipment over labor. Because wages and benefits aren't deductible and the costs of plant and equipment are immediately deductible, these systems dramatically increase the cost of labor compared with the cost of equipment. This hurts industries that employ highly skilled workers and pay attractive salaries and benefits.

It also encourages companies to replace workers with technology because the cost of labor would be artificially high compared with the cost of machines. That creates an incentive to locate labor-intensive work outside the U.S.

The flat tax is the second major type of reform proposal in Congress; a prime example of it is the Freedom and Fairness Restoration Act introduced by House Majority Leader Dick Armey (R-Texas). It is a commendable attempt at a flat tax system, but it still places undue burden on the service sector.

For instance, the proposal allows an employer to deduct contributions to cash compensation paid to employees, but items such as health care, stock bonuses and other stock incentive plans may not be deductible. In addition, it doesn't allow deductions for payroll taxes paid by an employer.

But incentives in the form of stock grants, bonuses and options have been important parts of the compensation system in start-up and high-tech growth companies over the last decade.

These costs, along with other fringe benefits and payroll taxes, are a major portion of the cost of doing business for service companies. In contrast, they are a much smaller portion of the cost of goods sold for manufacturing companies.

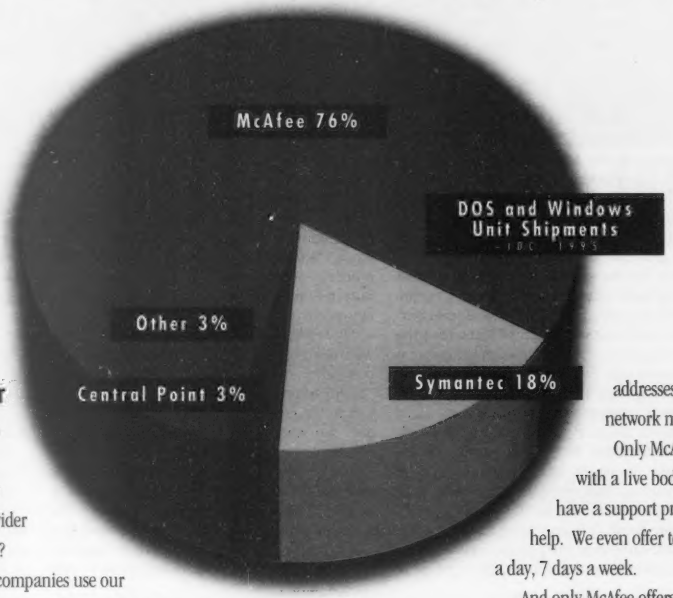
Under this proposal, manufacturing companies would be able to deduct almost their entire cost of goods sold, while service companies would be left with a major portion of such costs being nondeductible.

Many of the problems could be fixed with a properly designed flat tax system. The system would have to be carefully structured to ensure that the costs of doing business for labor-intensive service industries are as fully deductible as the costs of doing business in the manufacturing sector. Full deductibility of wage and benefit costs is critical.

Even a "first blush" analysis of the flat tax and VAT suggests good reasons to go slowly and make sure the information technology community is an equal beneficiary.

Miller is president of the Information Technology Association of America in Arlington, Va. His Internet address is hmiller@itaa.org.

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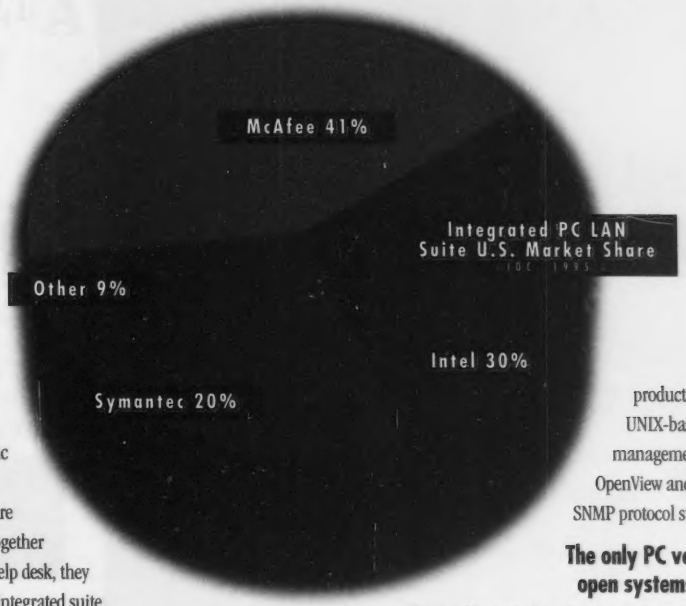
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# Desktop Computing

PCs AND SOFTWARE • PORTABLE COMPUTERS

## 20/20 Software takes hassle out of installation

By Cheryl Gerber

A PC installation program from 20/20 Software, Inc. is saving time and easing the drudgery of installing software suites in large corporations, according to beta testers and users.

Beaverton, Ore.-based 20/20 Software last week began shipping Version 4.0 of its PC-Install software on four platforms: DOS and Microsoft Corp.'s Windows 3.x, Windows 95 and Windows NT. The new version adds the ability to uninstall software and offers password protection and a menu-driven installation builder called QuickBuild for the Windows versions.

**More new features in PC-Install Version 4.0**

| |
|---|
| **PC-Shrink file compressor** – Compresses files or subdirectories |
| **Pop-up messages** – Display during file copying |
| **GUI** – Can be customized for each user |
| **Long files names** – Supported in Microsoft's Windows 95 and Windows NT |

QuickBuild is the most popular feature among some beta testers. "The menus are so easy to use that a nonprogrammer could build a software installation process using this version of the software," said Tom Rankin, a senior software engineer at Maxwell Laboratories, Inc. in San Diego who is beta-testing the Windows 3.x version. When someone types a question into QuickBuild, the software provides a

**20/20 Software,** *page 53*

## Amex wireless divides critics

### Some say environment threatens the company's competitive advantage

By Thomas Hoffman

Pragmatism drove the American Stock Exchange's (Amex) forthcoming wireless trading environment, which should support up to 400 options traders when it goes live next spring.

At an estimated development cost of $1 million to $3 million, the Amex wireless infrastructure is a bargain compared with what other exchanges have spent on comparable endeavors. The Chicago Board of Trade has spent at least $7 million on a wireless infrastructure.

The cost difference is partly because the Amex system, which will be based on Symbol Technologies, Inc.'s Spectrum24 spread-spectrum radio communications, was designed to handle Ethernet-capacity traffic at a frequency of 2.4 GHz and support the forthcoming IEEE 802.11 interoperability protocol.

Indeed, spread-spectrum communication costs less, gives users greater mobility and requires less power than the infrared communications path that the Chicago Board Options Exchange has adopted.

Plus, Amex's plans to standardize on Symbol's one-piece PC card will enable member firms to select from a wide range of mobile data terminal manufacturers.

In contrast, the Chicago Board of Trade's use of costly, customized Spectrix Corp. handheld terminals leaves member firms "trapped" with only one hardware vendor, according to Andrew Seybold, editor in chief of "The Outlook," a monthly newsletter in Boulder Creek, Calif. The newsletter focuses on wireless communications and mobility.



**Amex options traders** — *and eventually securities traders — will be able to access market data faster and more accurately by using mobile data terminals*

But for all its technical merits, Amex's standardized hardware approach will remove the competitive advantage from the New York-based trading floor, some critics argue. For example, Hull Trading Co., a Chicago-based market maker, is one of several Amex members that have been using their own proprietary handheld systems to trade options in the Amex pits since 1993, said Warren Langley, a principal at the firm.

Langley claimed member firms won't be able to use more powerful customized handheld devices that could benefit their investors by improving their trading positions. "There's a real danger in centralizing these systems and forcing everyone through the same technological doorway," he said.

**No comment**

Several Amex traders declined to be interviewed, citing the "politics" involved with the wireless trading project, including the cultural shift from the traditional pencil-and-paper order execution to wireless computing.

But Amex officials contend that most of the exchange's member firms are keen on the wireless project.

"What we're trying to do is bring all of this into an environment that's safe and secure for all of the members," said William Strauss, chief financial officer of Amex, which handles about 203,000 options contracts a day.

Strauss also downplayed the politics behind the move to handheld machines. "Years ago, when you introduced new technology, there was a reluctance to accept it, but I think we've passed that hurdle," Strauss said. "Member firms have accepted this. Either get on board or the ship is going to leave without you."

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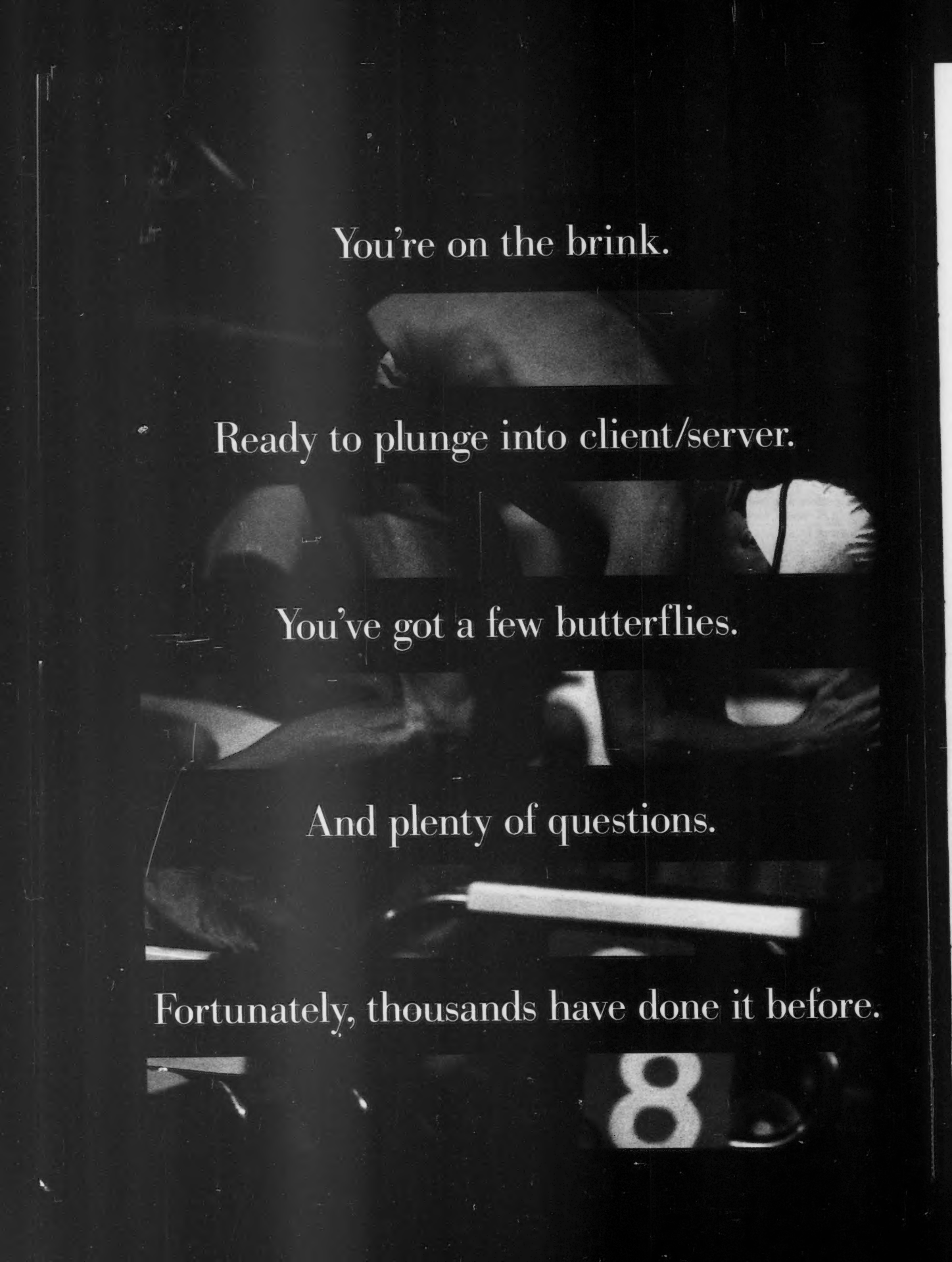
As the need for quality monitors expands into more homes and businesses, the appreciation of Nokia excellence grows with it. And, as more people look into Nokia, the appreciation of Nokia value grows too.

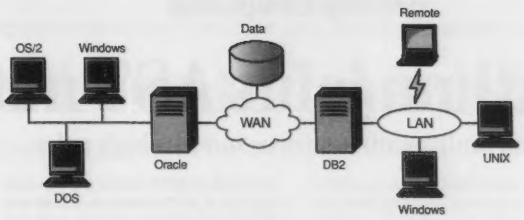
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# High-end Pentium joins AST notebook line

## 90-MHz system boasts Win 95 and multimedia features but at a high price

By Jaikumar Vijayan

AST Research, Inc. last week joined the rapidly growing list of vendors that have already announced, or are planning to announce, high-end multimedia notebooks for corporate users. However, analysts, at least, expressed disappointment with the pricing, which they say isn't aggressive enough.

The new Ascentia 950N/90 from Irvine, Calif.-based AST is based on Intel Corp.'s 90-MHz mobile Pentium chip and comes packed with a number of multimedia capabilities, including the following:

- Full-screen, full-motion Motion Picture Experts Group video playback.
- A 16-bit business-quality audio system.
- A 10.4-in., high-resolution display.
- An optional docking station with quad-speed CD-ROM drives, 8-W speakers.

The system is one of the first notebooks to ship with Microsoft Corp.'s Windows 95 preinstalled and follows on the heels of a 75-MHz Pentium model that AST released in May. Next up is a 120-MHz Pentium model, which will ship when that chip becomes available from Intel sometime later this year. The notebook will ship with an 11.4-in. screen, according to a source close to the company.

**AST's Ascentia 950N/90**



**PROCESSOR:** 90-MHz Pentium
**MONITOR:** 10.4 in. active-matrix
**HARD DISK:** 1.2G bytes
**MEMORY:** 8M bytes of RAM
**DIMENSIONS:** 8 1/2 in. by 11 1/2 in. by 1.8 in.
**WEIGHT:** 6.4 pounds
**PRICE:** $5,499

### More on the way

Other major vendors that have made similar announcements, or are planning to shortly, include Compaq Computer Corp., Panasonic Personal Computer Co. and IBM. Panasonic has already begun shipping its multimedia notebooks, while Compaq, which announced its LTE Elite 500 series, will start shipping next month. Meanwhile, IBM will announce its new ThinkPad multimedia notebooks this week.

"Overall, AST has always had good solid notebook products," and this one isn't any different, said Jennifer Munson, an analyst at Workgroup Strategic Services in Plymouth, N.H.

"It seems like the typical product aimed at the corporate sales, presentations and training markets," Munson said.

Ascentia 950/90N is being positioned at the top of AST's notebook lineup and will ship with a dual-install option that allows users to choose between Windows 95 and Windows 3.1 [CW, July 3].

The systems ship with active-matrix and passive-matrix screens and support up to 1.2G bytes of hard disk space. They also feature 8M bytes of RAM and lithium ion batteries from Sony Corp. Prices start at $5,499 for the active-matrix model and $4,499 for the passive-matrix version.

The announcement comes at a time when the company has been battered by mounting losses and a series of stunning management changes, capped recently by the abrupt resignation of Chief Executive Officer Jim Schraith.

In this context, AST's new notebooks are competitive feature-wise but a disappointment as far as price is concerned, said Randal Giusto, an analyst at International Data Corp. in Framingham, Mass. For instance, IBM's new multimedia ThinkPads start at just over $5,300 but feature a larger 12.1-in. screen and tilting keypads.

"The portable market is moving so fast that AST not only needs to increase its shipments but market share as well ... this product keeps them in the game as far as features go, but I really expected more aggressive pricing," Giusto said.

# News wire rides Wave to corporate desktop

By Jaikumar Vijayan

Wave Systems Corp., a New York-based provider of electronic information delivery systems, has spun off a new company that will offer pay-per-story news delivery to the corporate desktop starting Nov. 1.

Called Network News Corp., the new venture will deliver wire service content to the business desktop via satellite using Hughes Network Systems' DirecPC service. Current content providers include Knight Ridder/Tribune Business News, PR Newswire and BusinessWire.

**On-line wire service**

A patented metering technology from Wave Systems will allow the company to charge customers per story. Typically, this will range from between $1 and $1.25 per story, depending on the wire service from which it is taken, said Sanders Smith, president of Network News in Reston, Va.

"Our research shows that there is a substantial demand for real-time news to the corporate desktop if the costs are reasonable," Smith said.

### Steep setup

Hooking into the service isn't particularly cheap, though — customers initially will have to pay an estimated $15,000 for a 50-user setup.

The cost includes charges for a satellite dish and receiver, a one-time licensing fee for information search and filtering software from Verity, Inc., an installation fee as well as the cost of purchasing a dedicated Microsoft Corp. Windows NT Pentium server with large disk space.

In addition, customers also must pay a monthly connect fee that starts at $50 a month for 10 users.

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## Briefs

### IBM spreads out ProShare

IBM has announced plans to offer ProShare videoconferencing technology on OS/2 and to actively market ProShare conferencing with its mobile and commercial desktop PCs.

### CD-ROM gets plug and play

Plextor Corp. in Santa Clara, Calif., has unveiled 4Plex Plus, a plug-and-play CD-ROM drive that can be attached to a computer without users having to check or reset SCSI identification. The drive will ship this month; no pricing information was available.

### ISDN services connection

U.S. Robotics has announced a PC-based terminal adapter that connects to Integrated Services Digital Network (ISDN) services. The Sportster ISDN 128K is designed to work with the built-in ISDN capabilities of Microsoft Corp.'s Windows 95. The product costs $549.

### HP unveils CD bundle

Hewlett-Packard Co. is bundling Adaptec, Inc.'s CD-ROM utility software with its new SureStore CD-Writer 4020i recording system. The Adaptec software allows users to transfer files to CD, create audio disks, view Photo CDs and write new CDs.

# Utility extends control over Win 95 desktops

## WinShield lets PC managers hold the reins on users' privileges

By Stuart J. Johnston

**■ Corporate PC managers who need to deploy Microsoft Corp.'s Windows 95 while controlling users' urges to customize their desktops now have a tool that provides more control than the System Policy Editor built in to Windows 95.**

WinShield, from Kent Marsh Ltd. in Houston, gives PC managers more flexible control of users' ability to change system settings, delete folders or files and copy software.

It also can be used to control access to the Internet, restrict users to running only specified programs, provide additional system security and prevent the unauthorized use of certain CD-ROMs, such as games.

### Use it selectively

Some PC managers generally applauded the product's goals but said use of such a product should be determined by each work situation.

"There are places like production lines and point-of-sale systems that use PCs where you want to make sure people are doing their jobs," said Briscoe Stephens, coordinator for space sciences in the Advanced Scientific Information Systems group at NASA in Huntsville, Ala.

"But I'm against using it in an office environment," Stephens said. He said it is worth the risk that workers will lose some productivity by allowing them the freedom to be more creative at their jobs, and trust is a key component in that equation.

That sentiment was partially echoed by Bill Holder, director of operations at MicroPath, a PC asset management consultancy in Bellevue, Wash.

"From an asset management perspective, IS management is recognizing a greater need to control the desktop, [and] this allows an organization to keep detailed inventories" of software by not allowing user-initiated changes, Holder said. Still, "this product will work in some [corporate] cultures and not in others," he added.

Don Barker, associate professor of information sciences at Gonzaga University in Spokane, Wash., likes the idea of a product that gives IS managers more granular control over users' privileges than Windows 95's administration features. Barker is responsible for about 85 PCs at the university's business school and also writes textbooks on how to use Windows.

### Lack of flexibility

Windows 95's System Policy Editor does not provide enough flexibility for many management situations, Barker said. For example, there are many circumstances where he would like to enable users to create new folders but not accidentally delete folders containing programs.

Barker said he also sees some benefits to keeping CD-ROM users from running games or using other types of CD-ROMs that aren't authorized for use on school computers. "I think there's definitely a niche for a product like this," he said.

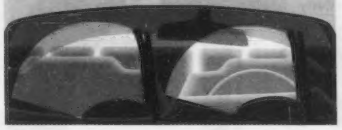
Additionally, WinShield can be used to selectively limit access to applications, floppy disk drives and networks. It can also be used to keep users from exiting to DOS to perform unauthorized operations, according to Kent Marsh Ltd.

WinShield costs $49.95.

**Key features of WinShield**

**Kent Marsh Ltd.'s WinShield utility lets IS managers gain control over Microsoft's Windows 95 desktops by:**

- Restricting access to applications, control panels and Explorer tools.
- Controlling access to the Internet and The Microsoft Network.
- Preventing changes to system settings.
- Controlling access to DOS functions.
- Enabling use of only authorized CD-ROM drives.



**Windows 95 sales**

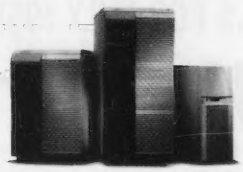
PC Data estimates that 4 million units of Windows 95 may have been sold, counting new PCs, in the new system's first three weeks on the market.

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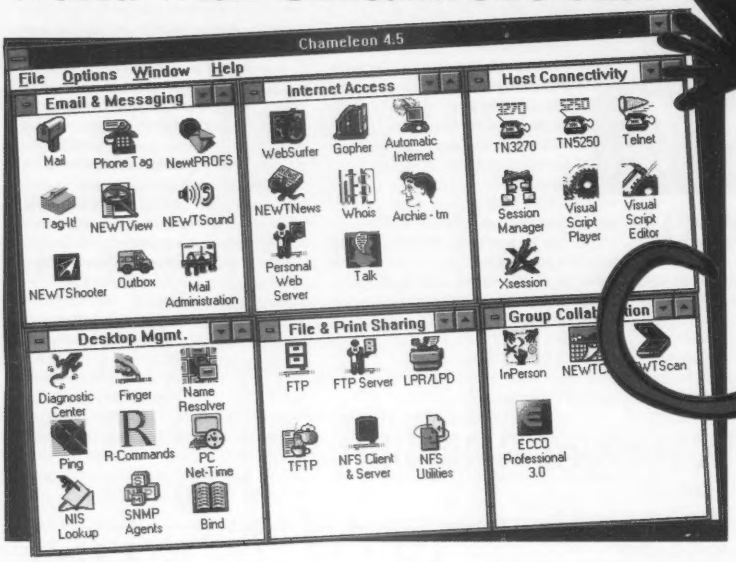
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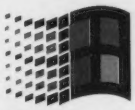
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# Firm delays Win 95 move due to lack of NetWare 4.x support

By Computerwoche staff
HEIDELBERG, GERMANY

Who needs Windows 95? While it may seem obvious to some consumers that Microsoft Corp.'s new operating system is a status symbol of the '90s, professionals are asking themselves whether the cost of upgrading can be justified.




At BASF Corp., the answer is a clear yes — a response that will run the company roughly $20 million in upgrade costs.

But, unfortunately for Microsoft, the lack of NetWare Directory Services (NDS)-compatible drivers for connecting to Novell, Inc.'s NetWare 4.x network operating system is delaying BASF's adoption of the Windows upgrade.

**On hold**

"This lack of NetWare 4.x support means that we can't implement Windows 95 despite considerable pressure from below," said Dieter Geiss of the company's corporate computing and information technology group.

The giant chemical company, which uses about 20,000 PCs, intends to switch to Windows 95 as its client operating system in the medium term. Even departments that until now have been loyal to the Macintosh are set to migrate to Windows 95.

BASF has been using Microsoft's Windows 3.x, which is "a veritable time bomb," according to Geiss. His main gripe is the chronic shortage of system resources coupled with the complicated method of operating the network components.

Geiss said he intends to take advantage of the remote administration option in Windows 95 to overcome these deficiencies. He said he hopes that the cost of conversion to the new release will pay dividends by cutting in half the number of on-site visits he has to make.

**A notable link**

Geiss said he likes the look of the connectivity options for networks offered by Windows 95. A notable beneficiary of this new functionality is the link to NetWare 3.x servers. In fact, it comes off far better than under the client software originally shipped with the product by Novell, Geiss said.

The computer specialist said he is particularly impressed with two new enterprise network functions incorporated in Windows 95. Drive mapping is no longer necessary, and the LPT print format redirection that was previously common is a thing of the past.

The system's universal naming convention simplifies the administrator's job by allowing all network components to be addressed under their names instead of having to use cryptic character strings.

BASF also noted that its PCs will continue to run normally should the network shut down.

But the cloud darkening the horizon is the lack of NDS-compatible drivers for connections to NetWare 4.x. This is particularly critical because the company has converted 16% of its more than 250 NetWare file servers to NetWare 4.x.

Geiss also sees potential problems with the hardware that Windows 95 requires because BASF uses everything from 286-based PCs with 640K bytes of RAM right up to fast 120-MHz Pentium systems with 64M bytes of main memory. However, in tests involving 386SX systems equipped with 8M bytes of RAM, loading times of seven minutes were recorded. For this reason, Geiss doubts Microsoft's statement that Windows 95 would run on a 386 with 4M bytes of RAM.

**UK sales**

UK sales of the Windows 95 operating system have topped 250,000 units during the first 10 days after the Aug. 24 launch, according to company officials. Among the big companies adopting the software are major retailer Marks & Spenser and British Petroleum, which is spending more than $46 million on 30,000 copies of Windows 95 and Microsoft Office.

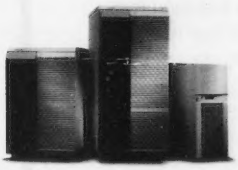
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## 20/20 Software

CONTINUED FROM PAGE 45

dialog box from which the person can choose among several options.

In fact, Rankin has already used the installation program he built with the beta version to install an internally developed engineering analysis tool across the company's Windows 3.x, Windows 95 and NT platforms.

Arnie Wolen, president of Sedona Internet Services, Inc., an Internet service provider in Sedona, Ariz., is beta-testing the Windows 95/NT version. He said the QuickBuild feature in the 32-bit version can ease the tedium of installing software suites or multimodule software packages in large companies. "This gives you a simple way to install Windows 95 or NT software. It's got routines that automatically break the software down into disks for you," he said.

> **"The end user is happy because the software installs by itself, and we're happy because we know how it's being installed."**
> — Gary Brook, McDonald's Corp., Oak Brook, Ill.

**Quick fix**

One problem that beta testers found with PC-Install was a bug in the Windows 95/NT version. A user, who asked to remain anonymous, said the bug made his computer crash when he tried to install the second disk of a multidisk software package. But 20/20 Software fixed the bug a week before the product shipped, company officials confirmed.

Beta testers said the new version has many improvements over its predecessor. It lets users customize the look and features of the installation program in various ways and supports installation from network servers and CD-ROM drives.

A veteran user of PC-Install said Version 3.0 has reduced the number of technical support calls so much that he plans to buy the Windows 95/NT version. "This is a real time-saver for large corporate developers," according to Gary Brook, accounting systems manager at McDonald's Corp. in Oak Brook, Ill.

**Questions abound**

Before he used the software, Brook said, he fielded many calls on how and where to install software. PC-Install automated many of those questions, so users no longer have to ask, he said. And developers said they felt they had more control over the location and management of software.

"Since we created the install script, the program automatically defaults to the correct place to install," Brook said. "We know in which directory we installed the software, so it saves time to locate the software and update the files without the user having to intervene."

Version 4.0 began shipping last week for all four platforms. The Windows 95/NT version costs $249 if purchased from 20/20 Software directly. To order, contact the company via CompuServe at 74774,222 or via the Internet at upgrade@twenty.com. The upgrade price for Windows 3.x or DOS versions is $79.

# IBM unites its support centers

By Cara A. Cunningham

PARIS

IBM is consolidating its individual telephone support centers into a Pan-European organization aimed at serving PC hardware and software customers.

Officially opened in September, IBM's HelpCentre is located in Greenock, Scotland, next door to the company's PC manufacturing plant, according to officials at IBM's Europe, Middle East and Africa division, headquartered here. Until now, the company ran independent support centers in European countries, including England, Scotland, Wales, Ireland, Belgium, France, Luxembourg and Switzerland.

By the end of the year, IBM intends to add the Netherlands, Spain and Austria to the list and will increase the number of multilingual support agents from roughly 140 to more than 200, officials said. At that time, languages supported will include French, English, Dutch, Spanish, German, Italian and Flemish.

The HelpCentre is expected to cover all European countries by mid-1996, company officials said. The center's goal is to respond to customers — who pay for a local phone call — within 30 seconds.

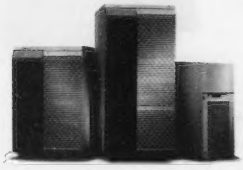
Cunningham writes for the IDG News Service in Paris.


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**Capsoft Development Corp.** has introduced HotDocs 3.0, document automation software.

According to the American Fork, Utah, company, HotDocs 3.0 converts Windows word processing documents into automated templates, letting users quickly assemble customized documents.

HotDocs 3.0 was designed for users who routinely build boilerplate, customized template documents out of word processing documents but don't want to learn complex macro languages.

To automate a template, a user locates text that changes each time the document is used and inserts a HotDocs variable. Users then answer questions based on the variables to assemble a document. Once the template is built, it can be used indefinitely to create customized documents.

HotDocs 3.0 is available in 16- and 32-bit versions.

It is compatible with Novell, Inc.'s WordPerfect for Windows, Lotus Development Corp.'s Ami Pro/Word Pro and Microsoft Corp.'s Word for Windows.

HotDocs 3.0 costs $99.

▶ *Capsoft Development*
*(801) 375-6562*

**Macromedia, Inc.** has introduced FreeHand 5.5, design and illustration software for Apple Computer, Inc.'s Macintosh and Power Macintosh.

According to the San Francisco company, FreeHand 5.5 is a creative graphics tool that improves the quality of multimedia and Internet graphics with enhancements that make screen-based images crisper and more accurate.

New features let users output bitmapped images that are optimized for screen-based media.

FreeHand 5.5 includes a graphics feature that lets designers place graphic objects within blocks of text.

FreeHand 5.5 supports third-party Adobe Systems, Inc. Photoshop plugins. This allows users to apply special-effect filters to Tag Image File Format images within FreeHand without having to switch back and forth from Photoshop.

Designers can use FreeHand 5.5 and Photoshop acquisition filters to operate scanning software created for Photoshop. FreeHand 5.5 offers special options for PowerPC 604-based Power Macintoshes.

It costs $595.

▶ *Macromedia*
*(415) 252-2000*

**Xerox Corp.** has unveiled Document WorkCenter 250, a multifunction printer/fax product.

According to the Palo Alto, Calif., company, Document WorkCenter 250 is a combination fax, PC fax, printer, scanner and copier. It was designed for home or small offices.



**Xerox's** *Document WorkCenter 250*

The product incorporates document recognition, communication and ControlCenter software, which allows users to accomplish several tasks simultaneously.

ControlCenter software lets users configure Document WorkCenter 250 with default settings. They can also use speed-dial telephone numbers to fax from a Windows interface.

Document WorkCenter 250 includes Xerox's TextBridge Professional 3.0 optical character recognition software. The software and the product's 300 dot/in. scanner let users scan articles and memos into their PCs and convert them into on-screen, editable text.

Document WorkCenter 250 also functions as a 300 dot/in. fax machine and ink-jet printer.

Document WorkCenter 250 costs $699.

▶ *Xerox*
*(415) 813-6800*

**Simple Technology, Inc.** has started shipping memory upgrades for Apple Computer, Inc.'s Apple 9500 tower system.

The Apple 9500 tower system comes with 16M or 32M bytes of standard memory and has 12 expansion slots to expand memory up to 768M bytes. Simple Technology's memory upgrade for the Apple 9500 system is a 168-pin dual in-line memory module in 8M-, 16M-, 32M- or 64M-byte capacities.

The modules can be installed in any combination. When the memory is installed in matched pairs, the 128-bit addressing is activated when the system is booted up.

Pricing for the Santa Ana, Calif., company's modules is $315 for an 8M-byte module, $630 for a 16M-byte module, $1,250 for a 32M-byte module and $2,500 for a 64M-byte version.

▶ *Simple Technology*
*(714) 476-1180*

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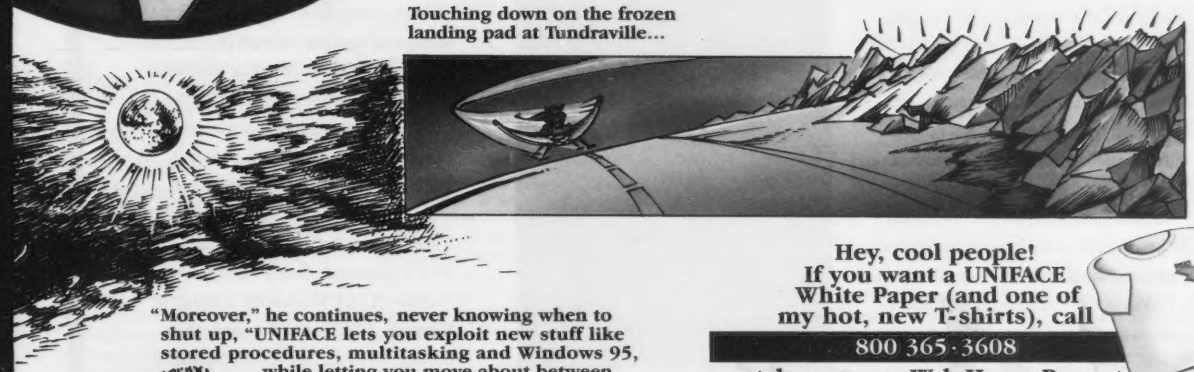
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Until recently, e-mail, electronic data interchange (EDI) and public networks such as the Internet defined the scope of inter-enterprise connectivity. These tools work well for simple information exchange and structured transactions, but are not well-suited for collaborative business-to-business applications that move documents through a multi-step process. To broaden the possibilities of an extended enterprise, a company should consider several criteria in choosing its communications platform:

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Equally important, Notes™ offers the most robust security available, including RSA encryption, user authentication, digital signatures, and multi-level access control. And users can access Notes networks by LAN, WAN, or telephone dial-up.



Notes also includes bidirectional replication to manage the complexity of application updates between companies. Notes replication distributes not only data, but the latest application design as well. With Notes, inter-enterprise applications that support team problem-solving and automated workflow become possible. Notes even offers a full range of choices to integrate your legacy and relational systems into these new collaborative applications. And Notes networks can scale to support up to 100,000 users with the appropriate server infrastructure.

Many companies have redefined their inter-enterprise business processes using Notes. Others have built entirely new businesses around it.

- A software company has built a Notes-based business partner network which *continuously* updates resellers with the latest product information, technical notes, and even customized pricing. The result: faster time to market for products, shorter sales cycles, and improved customer service.
- New network-based businesses are linking buyers and sellers in secure electronic commerce anywhere in the world. These new companies offer services from brokering the disposal of hazardous waste materials to helping insurance companies negotiate significant savings on legal bills through precise job tracking and prompt electronic payments.
- For highly distributed collaboration, many companies are outsourcing WAN communications and finding value in managed, private Notes network services. Through AT&T Network Notes,™ a joint venture between Lotus® and AT&T® to provide Notes-based services over the AT&T Worldwide Intelligent Network, AT&T provides application hosting, WAN and server management, customized billing, and administration and support services.

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*This is the sixth in a series of short essays on the benefits of groupware technology. To receive a bound set of all the essays, please call* **1-800-828-7086 ext. B187.** *Or explore Lotus on the World Wide Web at* **www.lotus.com.** *©1995 Lotus Development Corporation, an IBM subsidiary, 55 Cambridge Parkway, Cambridge, MA 02142. All rights reserved. Lotus, Lotus Notes and Working Together are registered trademarks and Network Notes and Notes are trademarks of Lotus Development Corporation. OS/2 Warp and AIX are registered trademarks of IBM Corp. AT&T is a registered trademark of AT&T Corp. All company names are respective trademarks of their companies.*

MULTIMEDIA JOLTS DURACELL TRAINING PROGRAM, 64
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# Will Lotus get the message?

## Company continues its work on client/server messaging products; users want to see apps in action

By Suruchi Mohan

Despite changing its electronic-mail strategy midstream and undergoing an acquisition by IBM, Lotus Development Corp. has kept its messaging direction relatively stable during the past 10 months. But users are still waiting for Lotus to deliver its next-generation goods.

Tim M. Crawford, a member of the technical staff at National Semiconductor Corp. in Santa Clara, Calif., said he would prefer to see the strategy "actually work" than to "see it on paper."

Closer Look
**Lotus' messaging strategy**

Lotus — like competitors Microsoft Corp. and Novell, Inc. — is busily working on client/server messaging products, all of which were supposed to be available by now but are late (see chart). In these products, both the server and the desktop computer process information. This contrasts with the current generation of file-sharing E-mail systems, in which the server handles all the processing.

Central to Lotus' strategy is the idea of mixing and matching client/server and file-sharing components so users can migrate gradually to a client/server environment whenever they wish. Another major tenet is that users should be able to buy only what they need instead of having to purchase and install a huge piece of software with more functionality than they require.

"I recognize they couldn't do a one-size-fits-all approach," said Jeff Held, a partner at Ernst & Young in New York and a Lotus customer. "Some wanted client/server, some file/sharing and some, the whole package."

To accommodate these and other user demands, Lotus had to back off from its original plan. It announced with great fanfare its Lotus Communications Server (LCS) in September 1993. However, LCS would have turned out to be a giant piece of software that would have required users to upgrade to the client/server model whether or not they wanted to.

### Next wave

Enter the Communications Server, or CommServer — the name for Lotus' new strategy, which the company announced last December.

"They announced a redefinition of E-mail and Notes and made Notes the basis of client/server mail," said David Marshak, vice president of electronic information services at Patricia Seybold Group in Boston.

CommServer includes a single message store for Notes and CC:Mail and sports larger databases and larger directories, he added.

The original LCS was to be a superset of CC:Mail, Lotus' E-mail product, and Notes. The company planned to add gateway support for IBM's Professional Office System (Profs) and Digital Equipment Corp.'s All-In-1 later, said Mark Stieglitz, director of messaging products at Lotus in Mountain View, Calif.

But LCS would also have required users to replace their CC:Mail routers with a purely client/server setup. So if users just wanted to upgrade their old file-sharing back end, for example, they couldn't do it.

With the new CommServer arrangement, they can do exactly that and upgrade DB6 — the old file-sharing back end — to DB8, the new version. When DB8 is delivered by early next year, it will allow administrators to add and delete users without bringing the whole system down.

This is key for Thomas Bridges, a network administrator at the Internal Revenue Service in Austin, Texas, who uses DB6.

Bridges said his network is large and dispersed and generates heavy traffic among the different sites. Because of all the traffic, a lot of maintenance is required, and the IRS has to bring its E-mail system down every day to do it.

"I expected DB8 this summer," Bridges said. But with all the delays, the IRS doesn't have the money in its budget to buy the hardware upgrades to run the new software, he said.

Another difference is that LCS would have built-in support for X.400 and Simple Mail Transfer Protocol. With CommServer, these are optional modules.

### Integrated system

Finally, with LCS, users would have had to buy two separate clients — one for file sharing and another for client/server. In the CommServer scheme, however, one client — CC:Mail 7.0 — handles both.

The CC:Mail Connector, which resides in Notes, passes messages and synchronizes directories and discussion databases between the Notes and CC:Mail environments.

Further, Lotus is trying to give CC:Mail and Notes similar interfaces.

Users said this was will be a good thing, once Lotus delivers. "NotesMail users felt like second-class citizens," Held said, because the interface is "very ugly."

**Lotus' E-mail components**

| PRODUCT | DESCRIPTION | AVAILABILITY |
|---|---|---|
| DB8 | The upgraded post office for users who don't want to move to client/server. An improvement over the existing post office, DB6, because it doesn't require administrators to take the system down while adding or deleting end users. | Later this year or early next year |
| Lotus Messaging Switch (LMS) | A translator that allows Notes to communicate with other E-mail systems. Will have an X.500 component. | LMS: Available now; X.500 component: Q1 1996 |
| Notes 4.0 | New client/server back end for Lotus' E-mail and groupware offerings. | By the end of this year |
| CC:Mail 7.0 | Desktop-based client software that allows users to communicate with both DB8 and Notes 4.0. | Q1 next year |

**Another route**

Lotus' heavy emphasis on Notes has often raised questions about the future of CC:Mail. Trying to deal with this perception is the "bane of my existence," said Michael Zisman, vice president of the communications products group at Lotus. Zisman said a lot of development money is poured into CC:Mail and its revenue continues to grow, but he didn't provide specifics.

## Users want directory assistance

Directories have dogged Lotus. Or rather, the articulation of a clear strategy has done so.

As part of its LCS strategy, Lotus offered native X.500 support. X.500 is a set of directory protocols standardized by the International Telecommunications Union.

Then, last December, Lotus backed away.

Lotus changed gears after it acquired SoftSwitch, Inc., which brought with it a mail switching product. The product, now called the Lotus Messaging Switch, acts as a gateway among disparate systems and helps synchronize directories. Its X.500 component, known as Lotus Pages, went into beta testing last month, said Michael Zisman, vice president of the communications products group at Lotus.

Some users said they would like to see Lotus integrate X.500 with Notes rather than add another layer of complexity with a second piece of software.

"X.500 concerns me," said Tim M. Crawford, a member of the technical staff at National Semiconductor. Also, a lack of hooks to services, such as NetWare Directory Services, "concerns me. If Notes were based on X.500, it would reduce administrative issues," he said.

"I would like to see one master directory," as opposed to the current setup where each product has its own directory, said a user who asked not to be identified. Zisman responded that if enough users ask for X.500 to be integrated with Notes, it would be a "rational" thing for Lotus to do.

*—Suruchi Mohan*

**TIME FOR A CHANGE**

LOTUS ANNOUNCED AN E-MAIL STRATEGY IN 1993 BUT CHANGED ITS MIND IN 1994

| THE OLD | THE NEW |
|---|---|
| Monolithic architecture | Component-based architecture |
| Replacement of routers and network management systems required | Customer-controlled migration |
| Native SMTP, X.400 support | Optional SMTP, X.400 modules |
| Gateways to Profs, All-In-One and native X.500 support | X.500 to be part of Lotus Messaging Switch |



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# Nortel adds E-mail to its messaging mix

## Messenger 2.0 to link different operating systems

By Suruchi Mohan

Nortel, Inc. recently announced a messaging system that unifies voice mail, fax and electronic mail.

Messenger 2.0 will ship by year's end. The currently shipping Messenger 1.1 doesn't offer E-mail.

"They're attempting to be a central point for managing the process" of the different messaging systems, said Vince Rafferty, a director at InfoTech Consulting, Inc. in Parsippany, N.J. "They're in the communications business. Voice mail is already integrated with the PBX. Fax mail is an offshoot. They're tying into commercially available E-mail."

Nortel, formerly known as Northern Telecom, will not offer its own E-mail. Instead, it will offer connectivity to Lotus Development Corp.'s CC:Mail and Notes and to Microsoft Corp.'s Mail.

"Northern Telecom is stepping up to provide access to their users to different operating systems and architectures," said Joe Outlaw, a research analyst at DataPro Information Services Group in Delran, N.J. Nortel is trying to take the middle ground so it can work with every messaging media out there, he said.

E MAIL

**Full support**

Northern Telecom's Messenger integrated messaging platform supports Microsoft Corp.'s Windows 3.1, Windows for WorkGroups, Windows 95 and Windows NT. It will support the Macintosh client by the beginning of next year. The product will cost between $75 and $350 per mailbox.

Nortel is clearly trying to leverage its Meridian Mail voice messaging system. Messenger runs on an application server that is connected to Meridian Mail, which in turn is connected to the private branch exchange, or PBX, explained John Lenihan, the vendor's director of marketing in Dallas.

Messenger 2.0 will allow E-mail messages to be sent over the LAN to the application server, which can support up to 6,000 users.

"This [announcement] is aimed at supporting the Meridian base," said Gary Kim, an analyst at Probe Research, Inc. in Denver. "It is the right step for them."

At least initially, users won't be able to listen to their voice mail over their PC. The PC will notify them that they have voice mail waiting, but they will still have to use their phone to pick up the message, Kim said.

Maintaining a directory with so many types of data would be a nightmare for information systems managers, said Steve Kimball, a research analyst at Meta Group, Inc. in Reston, Va. "Unified/integrated messaging is not in existence yet; front-end GUI is what they're doing. IT vendors will have trouble integrating with the directories," he said. Nothing has changed on the back end where all the servers with their different messaging media sit, he said.

Maria McCallion, telecommunications systems administrator at the law firm of Nutter, McClennen & Fish in Boston, said the E-mail integration would help keep Nortel in the running as the firm evaluates messaging products. "We have a solid voice mail and telephone system. The question is one of transporting E-mail. Conceivably, we could stick with Messenger," she said.




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| **Boston**<br>October 3 | **Detroit**<br>October 24 | **Nashville**<br>October 18 | **San Diego**<br>October 26 | **Washington, D.C.**<br>October 5 |
| **Chicago**<br>October 12 | **Denver**<br>October 25 | **New York City**<br>October 5 | **San Francisco**<br>October 17 | |
| **Cleveland**<br>October 17 | **Los Angeles**<br>October 25 | **Philadelphia**<br>October 10 | **San Jose**<br>October 18 | |

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# Banyan boosts service focus with Collabra

By Suruchi Mohan

Banyan Systems, Inc. added a piece to its vision of being a service company last week, announcing it will tightly integrate Collabra Software, Inc.'s Share 2.0 into the Banyan messaging infrastructure.

Users adopted a wait-and-see attitude toward the offering.

Collabra Share is a discussion database that offers users the electronic forum element of Notes without Notes' extensive application development capabilities. Collabra Share will be integrated with Banyan's Intelligent Messaging messaging infrastructure and its BeyondMail electronic-mail package, which runs on Novell, Inc.'s Message Handling Service. The package means Banyan can offer users E-mail and an internal on-line forum.

Users said they are interested in Collabra Share. "We're looking at Collabra Share," said Charlie Dick, manager of small systems, networks and telecommunications services at the American Bureau of Shipping in Houston. The company is a large Banyan site that uses its messaging infrastructure. Dick said he is "still not sure of Banyan's suitableness for [the bureau's] environment" when it comes to using the BeyondMail client in conjunction with a discussion database.

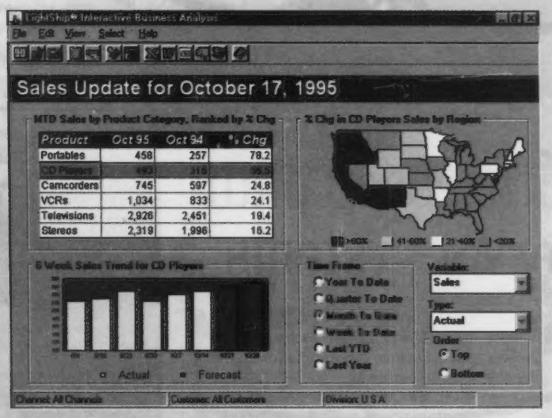
The California State Compensation Insurance Fund in San Francisco is using Collabra Share in conjunction with BeyondMail. Users are active on E-mail, but "collaborative computing takes more getting used to," said Lisa Bausell, data communications manager at the fund. "People are not really using it yet." But she said the technology offers clear benefits to users and administrators because it is easy to use.

**Right direction**

This is a "smart move for Collabra," said Joyce Graff, research director at Gartner Group, Inc. The company can go into heterogeneous environments and say it can run on top of everything, Graff said. Users don't have to rip out their installations; with Microsoft Corp.'s Exchange or Lotus' Notes, they do. "Maybe you would want to do that, but Collabra helps postpone it," she said.

Analysts said they don't see Banyan's move increasing its market share. In fact, Tim Sloane, an analyst at Aberdeen Group, Inc. in Boston, said Banyan might be stretching itself too thin by trying to expand on too many fronts. Right now, Westboro, Mass.-based Banyan could be seen as an E-mail company, a groupware company, a directory company and a network management company, he said.

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## Briefs

### Conner supports RAID 5

**Conner Storage Systems** in Lake Mary, Fla., a division of Conner Peripherals, Inc., has added support for RAID 5 fault tolerance to its NStor CR2 disk storage subsystem. Pricing for NStor CR2 for RAID 5 starts at $10,502.

### NASDAQ system on tap

The National Association of Securities Dealers recently urged the Securities and Exchange Commission to approve a proposed NASDAQ trading system that would let investors place orders electronically on up to 3,000 shares of a stock without dealing with NASDAQ market makers.

# Multimedia jolts Duracell training program

By Tim Ouellette

Duracell International, Inc. is counting on multimedia to power its worldwide employee training programs.

The Bethel, Conn., battery manufacturer is rolling out an employee orientation program that will let its 8,000 employees around the world view video clips from company officials and learn about company goals (see chart).

The multimedia program will give a consistent message to all employees, officials said.

"We had found it very difficult to provide a concise framework of information to new employees. There were just too many sources to round up," said Debbi Gillotti, Duracell's vice president for corporate MIS.

**Charging ahead**

Duracell's interactive multimedia employee orientation program, from concept to initial rollout, was developed in six months.

Duracell had more than $2 billion in sales last year. It has operations in Canada, Mexico and Europe and plans to expand into China and India later this year. About one quarter of its employees are outside the U.S., so Duracell has translated the program into Flemish, Spanish, Italian, French, German and Portuguese and will soon translate it into Chinese.

**Underneath the copper top**

Duracell uses multimedia to provide orientation training to its 8,000 employees world-wide. The user-controlled applications use digital video clips and graphics to provide training in the following areas:

- Organizational structure
- Product backgrounds
- Market share reviews for various countries
- Corporate culture
- Battery technology (available middle of next year)

### In-house effort

Neil Silverstein, manager for multimedia training at Duracell, used AimTech Corp.'s IconAuthor to develop the multimedia presentation. IconAuthor separates the structure of the application from the content, so users can add updates without rewriting the application.

"We also minimized the development costs by using our in-house team whenever possible," Silverstein said.

A study conducted this year by Omni-Tech Consulting Group, Inc. in Chicago noted that companies are more inclined to develop multimedia training courses in-house to save on travel costs, teaching fees and employees' time away from work [CW, April 14].

The use of video is an important part of personalizing the interactive training for each employee.

"We wanted company leaders to become real to employees around the world," Gillotti said. "That is hard to duplicate with a [human resources] person just reading from a stack of materials."

One rough spot in the project had nothing to do with the authoring software — it took longer than expected to get the materials translated into the various languages. And start-up costs for the project may hit hard in some international offices; they will be required to buy PCs with CD-ROMs and other multimedia features.

But with other training projects in the works for multimedia, the initial costs should pay off in a short time, Gillotti noted. She said she expects to see technology rollouts and training for products such as Microsoft Corp.'s Windows 95 handled via interactive multimedia. For example, a project manager could provide a video walk-through of the product.

The company this week will start to develop its next major multimedia training program, the Battery Technology course. The course is now held only a few times a year; employees from around the world travel to one central site to attend it.

"Some employees have to wait many years to even attend this course," Silverstein said.

Systems integration

# Trecom comes up with lesson plan for users of client/server systems

By Mitch Wagner

**■ Systems integrator Trecom Business Systems, Inc. last week announced a new training program for client/server systems, as well as a fixed-price systems integration program for installing enterprise services.**

Trecom in Edison, N.J., focuses on managing the entire life cycle of a project, from design to installation to maintenance, and training its clients' employees to take over projects for themselves, said analyst Gene Raphaelian at Gartner Group, Inc.

"They're focused on knowledge transfer, not so much on going in and doing the job themselves and building an empire," he said.

**Trecom Business Systems, Inc.**
Edison, N.J.

- The company was founded in 1985 and has offices in Sacramento, Calif., on the East Coast and in Northern California.
- Trecom has 1,500 employees.
- Its projected revenue for this year is $130 million. Last year it was $87 million.

### Hands-on experience

Trecom's training program, StarTrack, operates with a learn-by-doing approach.

After the user organization's information systems staff assesses its own skill and undergoes training, the staff goes into Project Boot Camp, where it builds a client/server system for the enterprise under the supervision of the Trecom staff.

With this approach, the IS staff knows the project better than if Trecom built the application and then handed it over to the IS staff for maintenance.

### Self-analysis

The training program begins with self-assessment.

The IS staff members assess their own skill sets, and then one another's skills, and the process is checked by the Trecom staff.

The staff members assess technical skills and their attitudes toward work, such as the ability to work independently vs. the ability to work as part of a team, said David Roth, director of strategic relations for Trecom.

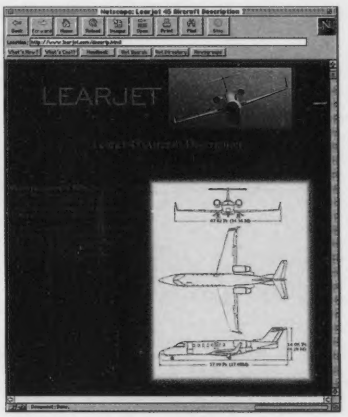
Training generally runs about six to eight weeks and is priced at $8,000 to $15,000 per person, depending on the size of the group and the type of training offered, Roth said.

The training courses are available at user sites, Trecom sites or a third-party location.

In its Cornerstone systems integration program, Trecom offers services, including technology planning, selecting and maintaining a company's portfolio of applications, training, delivery of systems and maintaining an infrastructure.

Trecom quotes a price for a project at the outset and will deliver a system based on that price.

"We take on a concept of shared risk with a client," Roth said. "It puts our skin in the game to ensure that projects come in at cost and on time."




**The Learjet 45** *is the world's first business jet designed totally on a CAD/CAM system, the firm said. Computer-automated equipment manufactures most structural components of the jet. The process yields improved precision and reduces the number of parts by 50%.*

## Briefs

### Managing the server

**Seagate Enterprise Management Software, Inc.** in Cupertino, Calif., has announced Seagate LANAlert 4.0, a new version of its Novell, Inc. NetWare server management software. It incorporates distributed monitoring agent software programs, called Server Expert Agents, that set alert thresholds based on an analysis of historical data collected from NetWare file servers. Seagate LANAlert 4.0 will be available in October for $5,995.

### Client/server packs ship

**Hyperion Software, Inc.** in Stamford, Conn., has announced Version 2.0 of its client/server-based Pillar financial and accounting software. It features multicurrency planning and analysis features and expanded financial modeling capabilities.




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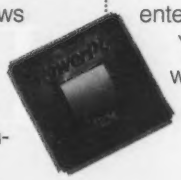
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Power Series systems also offer a choice of 32-bit operating systems: OS/2® Warp Connect,[1] Windows NT,™ AIX® and Solaris.®[1] And they come with Sensory Suite™ software, which eliminates the need to buy expensive add-in boards or chips for multimedia.



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## New Products

**Walker, Richer & Quinn, Inc.** has announced Reflection X for Microsoft Corp.'s Windows NT.

According to the Seattle company, Reflection X for Windows NT was designed to take advantage of multithreading, the ability to handle multiple tasks on multiple systems. It gives users fast memory access and local memory support, enhanced security and interprocess communications.

Reflection X for Windows NT includes a centralized site administration utility for creating enterprisewide setup configurations. It also features quick-start connection templates for easy access to X applications, on-line and interactive login support, network and statistic diagnostics and an X protocol trace utility.

Pricing for Reflection X for Windows NT starts at $469.

▶ *Walker, Richer & Quinn*
*(206) 217-7100*

**Electronics for Imaging, Inc.** has unveiled the Fiery XJE Controller, a print controller for desktop color laser printers.

The San Mateo, Calif., firm said the Fiery XJE Controller is an embedded board that provides continuous-tone, photographic-quality output and drives desktop color laser printers at speeds up to five times faster than current printers.

The Fiery XJE Controller runs desktop color laser printer engines at their maximum speed by using a RISC-based CPU and application-specific integrated circuits for faster image processing. It speeds up the output of documents by offloading all data movement functions from the controller's main CPU and allows one page to print while subsequent pages are processed. The Fiery XJE Controller has 600 by 600 dot/in. continuous-tone output on all prints.

Pricing for printers with the Fiery XJE Controller starts at $10,000.

▶ *Electronics for Imaging*
*(415) 286-8600*

**IPC Peripherals, Inc.** has introduced i2i Videoconferencing System.

According to the Fremont, Calif., company, i2i Videoconferencing System is a hardware/software combination that uses Integrated Services Digital Network or leased line and the Peripheral Component Interconnect slot. It includes an H.320 standards-compatible encoder/decoder board, a digital camera, telephone handsets and Win2Win software with Microsoft Corp. OLE links to support videoconferencing, whiteboard features and applications sharing.

Using the H.320-compatible encoder/decoder board, users can communicate with anyone using the H.320 standards, even if they are on another vendor's conferencing system.

The product lets users share documents as well as application programs that support OLE. Users can transfer files and edit and copy documents simultaneously.

Pricing for i2i Videoconferencing System starts at $1,295.

▶ *IPC Peripherals*
*(510) 354-0800*

**Xionics Document Technologies, Inc.** has announced XipPrint II.

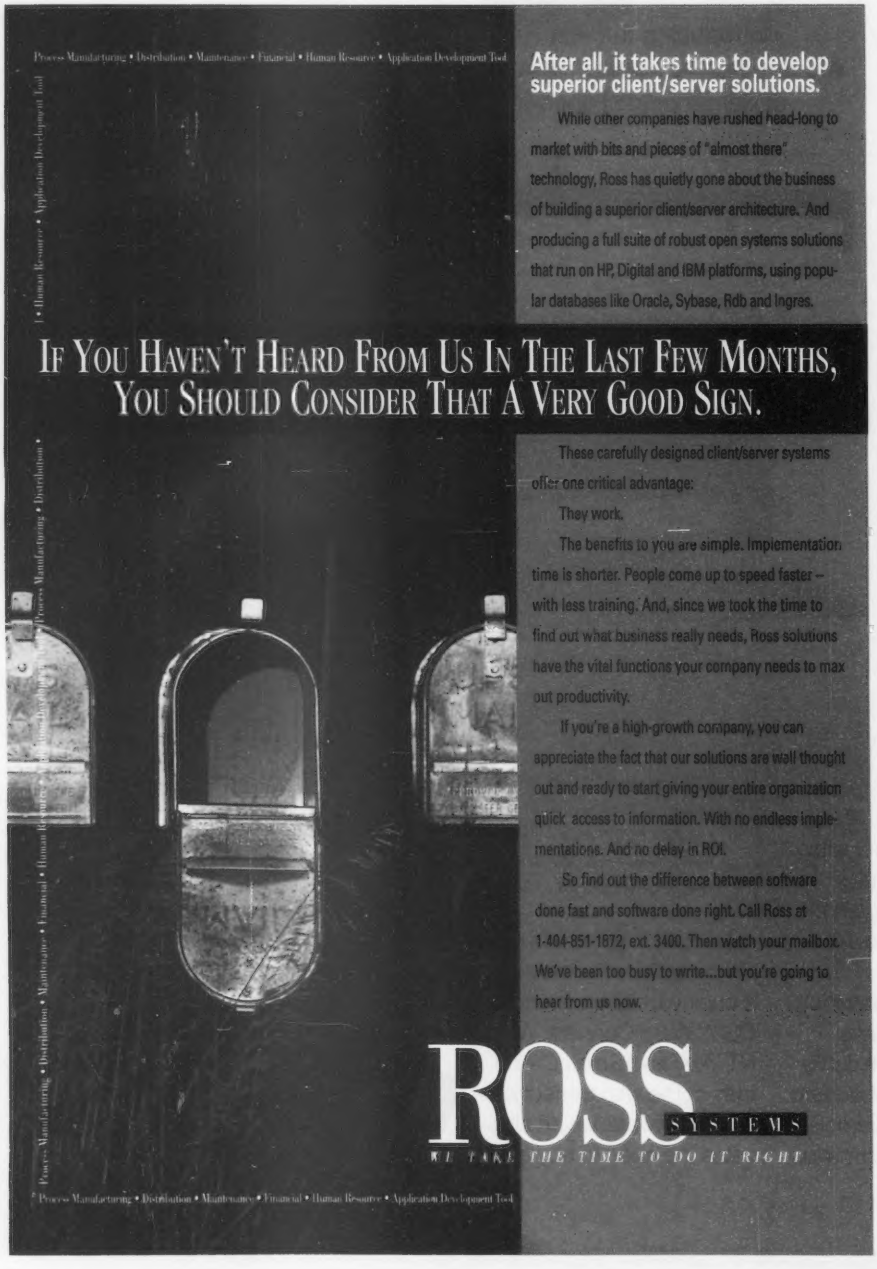
According to the Burlington, Mass., company, by installing the XipPrint II network image accelerator into the single in-line memory module (SIMM) socket of a Hewlett-Packard Co. HP LaserJet 4 series printer, users can print images at the rated speed of the printer and maintain full duplex printing, direct network connectivity and bidirectional printer status communications.

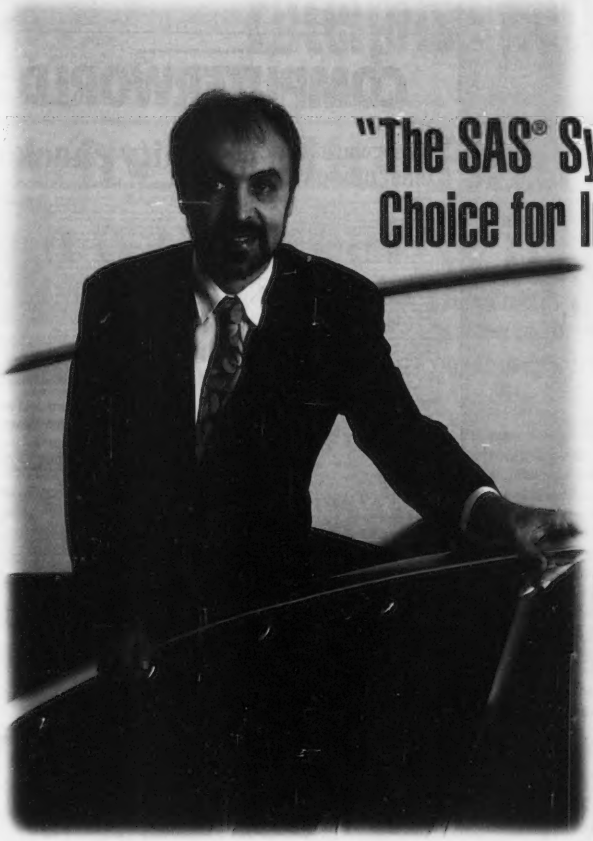
By installing the SIMM socket, XipPrint II leaves the modular I/O slot available for network connectivity with an HP JetDirect network interface card, which eliminates the need to purchase an external LAN server device for network connectivity.

XipPrint II prints JBIG Tag Image File Format (TIFF), G3/G4 TIFF and personal communications services files. It supports the HP LaserJet 4, 4+, 4SI and 4V printers.

XipPrint II costs $795.

▶ *Xionics Document Technologies*
*(617) 229-7000*





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**Smart Move, Smart Money** Moser believes that UBS has resolved those challenges in their choice of the SAS System as their strategic software. "Our previous system required many labor-intensive steps as data was moved from one software product to another," recalls Moser. "Today data access, management, and summarization is handled automatically by the SAS System. This has given us productivity gains of up to 200% in some areas. The SAS System is fully integrated and meets most of our analysis needs—it's our strategic choice in various research units of our bank."

Moser contends that using the SAS System has also turned traditional developer/end user wars into "a cooperative process. Now they sit side by side, building the application together." And saving the bank both time and money.

Ultimately, of course, it's up to the customer to decide how individual portfolios should be invested. But, with the SAS System as the tool for turning their data into meaningful information, UBS financial analysts can be certain those decisions are based on the most comprehensive, up-to-date information available.

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**COMPUTERWORLD**

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# Enterprise Networking



# Security pundits weigh war threat

By Gary H. Anthes
ARLINGTON, VA.

Attendees at a recent conference on information warfare agreed that the networks of U.S. companies are increasingly at risk. They said a broad defense, with plenty of top management support, is needed. Here is what some experts said:



National Computer Security Association's Michel E. Kabay

**Problems and threats**

"I believe we are facing an electronic Pearl Harbor. All you need is a PC, a modem, a little skill and a lot of patience, and you can do a lot of damage."

*— Ronald A. Gove, vice president, Science Applications International Corp., McLean, Va.*

"Hackers are getting more savvy every day. Your risks are increased by putting your business on the Internet or on any public network."

*— Paul Cormier, group engineering manager, Digital Equipment Corp.*

"It's clear that we have lots of vulnerable systems that the country depends on. Terrorist organizations are especially worrisome. They are eager for the kind of notoriety that would attend their knocking out the telephone system or air traffic control system."

*— Stephen Kent, chief scientist for security technology, Bolt Beranek and Newman, Inc., Cambridge, Mass.*

"In information warfare, offensive forces have an enormous advantage over defensive forces."

*— Paul Strassmann, distinguished visiting professor, National Defense University, Washington, and former director of Defense Information*

**Solutions**

"We need to design [systems] with the assumption they will operate in an unsafe environment. We need to manage passwords better, so that we no longer have 'Elvis' as a password anywhere in the world."

*— Ronald A. Gove*

"If we have an Air Force, why not a Cyberforce, and for the same reason. We invented the Air Force when the nature of war changed to three dimensions."

*— Michel E. Kabay, director of education, National Computer Security Association, Carlisle, Pa.*

"Management has washed its hands of [information security], assuming the technicians will take care of it. But it is a management issue, not a technical issue."

*— Paul Strassmann*



STELLA JOHNSON

National Defense University's Paul Strassmann

"The single most important tool is a well-articulated security policy. It doesn't have to be complicated, but it needs to be written down and have the support of top management."

*— Robert Stratton, security products and services manager, UUNet Technologies, Inc., Fairfax, Va.*

# Bank speeds loans with new network

## Hibernia National moves to improve customer service

By Laura DiDio

Lost network transmissions, extended waits for simple loan approvals — Hibernia National Bank customers suffered it all.

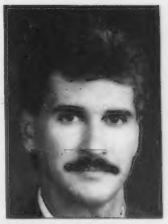
An antiquated network system meant that "we were always having problems; sometimes we actually had to put loan documents in interoffice mail or, in a couple of extreme cases, a taxicab" rather than send them over the network, recalled Thad Hymel, Hibernia's manager of distributed systems.

About 18 months ago, with productivity plummeting and competitors passing it by, the New Orleans-based financial institution realized a network upgrade was necessary to accelerate its lending operations. Saddled with a slow, cumbersome process rife with errors and lost documents, the bank determined that dumping its outmoded IBM Personal Computing LAN Program (PCLP) would help, Hymel said.

**Altered states**

PCLP provided only rudimentary file and print sharing, and Hibernia's 180 branch offices, scattered across several states, were connected over 9.6K bit/sec. lines.

Hibernia moved to a Novell, Inc. NetWare 4.1 network and also installed a series of Ascom-Timeplex, Inc. private frame-switching ST-50 backbone devices. The goal was to give the bank's customers better service and its own workers fast, reliable communications and network access between remote offices and the New Orleans headquarters.



Hibernia Bank's Thad Hymel

**ON SITE**

**Hibernia National Bank**
*New Orleans*

**Network setup:** 3,000 users at 180 sites in the U.S. NetWare 4.1 and Ascom-Timeplex frame switches used for connectivity to 180 branch offices.

**Benefits:** Turnaround time to process loans cut from one week to one day. Fewer mistakes in processing forms and increased productivity and network reliability.

"We've gone from being in a state of limbo to a state-of-the-art network," Hymel said. Since the bank installed the network, loan processing time has shortened from one week to as little as one day, Hymel said.

Faster loan processing makes an obvious difference to Hibernia's customers. The improved network has also decreased response time with remote branch offices and enabled workers to perform a number of tasks that weren't possible with the old equipment, Hymel said.

For instance, NetWare 4.1 means each regional office can generate and print its own loan documents. Documents and records no longer have to be sent via mail, or taxi, for that matter, Hymel said.

And because NetWare 4.1 and NetWare Directory Services have allowed Hibernia to centralize loan functions, Hymel said, the bank is seeing "a lot fewer mistakes, like missing paperwork or people manually keying in the wrong figures or interest rates."

# Sprint combines frame relay and ATM

By Neal Weinberg

Sprint Corp. is coming out ahead of its competitors — and probably ahead of the immediate needs of most users as well — with a hybrid frame-relay/Asynchronous Transfer Mode (ATM) service.

The Kansas City, Kan.-based company plans to offer its "interworking" service in November, targeting users who are pushing the bandwidth limits of their T1 speed frame-relay networks and want to upgrade to T3 speed ATM at their central hub.

Protocols adopted recently by both the Frame Relay Forum and the ATM Forum enable carriers to fashion a seamless, hybrid network. The benefit to users is the ability to mix the two technologies.

However, most users who employ frame relay for data say they don't need ATM's expensive, high-end, multimedia bandwidth just yet.

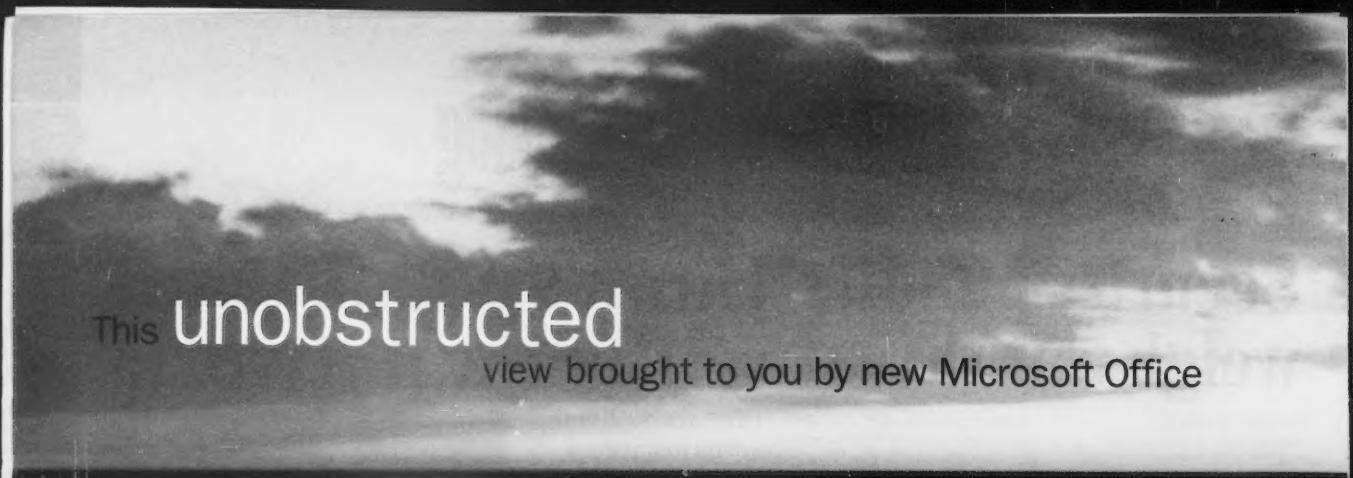
Brian Biesecker, manager of enterprise networking at DynCorp in Reston, Va., has had frame relay running for two years, carrying data to eight locations across the country.

Biesecker said he is using frame relay for file transfers and electronic mail.

"Frame relay is very stable," he said. "With the amount of traffic we are running, it's the best choice for us because of the cost and the bandwidth you can get on it. It's the best business choice."

But Biesecker said his network has plenty of capacity, and he currently has no need to move up to ATM.

**Sprint,** *page 80*


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# Introducing new Microsoft Office for Windows 95

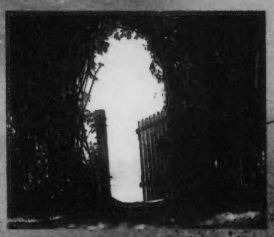
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# On-line rivals face off in verbal pushing match

By Kim S. Nash
SAN FRANCISCO

Put the top executives of the fiercely competitive major on-line services in a room, turn a spotlight on them and watch the fun.

That's what a standing-room-only audience of on-line users and developers got to do at a recent conference here sponsored by Jupiter Communications LLC, a New York market research firm.

Officials from all the biggies were there: America Online, Inc., CompuServe, Inc., Prodigy Services Co. and Microsoft Corp.'s The Microsoft Network (MSN). Also included was the fledgling AT&T Business Network, a service announced at the show but not expected to be active until late next month.

Although these outspoken executives agreed on the relatively lackluster acceptance so far of Integrated Services Digital Network technology, they quickly began verbal sparring.

Specifically, talk turned to how big a threat MSN really is, particularly because access to the network is bundled with the Windows 95 operating system.

Steve Case, chief executive officer of America Online in Vienna, Va., restated his long-held contention that such bundling gives Microsoft an unfair advantage over other on-line services.

"If the playing field was level, we would do exceedingly well against Microsoft.

**"IF THE PLAYING FIELD WAS LEVEL, WE WOULD DO EXCEEDINGLY WELL AGAINST MICROSOFT."**

Steve Case,
America Online



But it's not level," Case said.

Not true, according to Russ Siegelman, vice president of MSN at Redmond, Wash.-based Microsoft.

"One of the reasons AOL is successful is it's one of the best Windows applications going. The question is, 'Who's really going to have an advantage?' " Siegelman countered, referring to AOL's 3½ million subscriber base.

Overall, the convergence — when, why and how — of on-line networks with the World Wide Web became the major theme of the gathering.

**"WHO'S REALLY GOING TO HAVE AN ADVANTAGE?"**

Russ Siegelman
The Microsoft Network, referring to America Online's 3½ million-user installed base



Subscribers to the Big Three on-line services — AOL, CompuServe and Prodigy — spend roughly 10% of their time accessing the Web through these networks, officials from the three firms said.

By contrast, MSN users spend about 30% of their time on the Web, Siegelman noted.

The topic of money, predictably, boiled some blood.

One developer piped up that Microsoft seems to have a more appealing pay structure than the other on-line services. People who build applications for MSN are promised 70% of the money Microsoft will collect from MSN subscribers who access that content, he said. (MSN users will, in many cases, have to pay per piece of information they want to receive.)

America Online, however, pays developers a lesser amount, based on overall subscriber fees.

Alluding to the fact that MSN has relatively few subscribers and doesn't seem to be making money, Case countered: "At this point, I would ask, 'Seventy percent of what?' "

## http:

### You asked for it

**WE HAVE HEARD** from readers who, after seeing our Hot Sites collection of on-line resources for Cobol programmers in our Sept. 11 issue, wanted a similar list for C++ aficionados. Here it is:

HOT SITES

- For those of you well versed in the C++ programming language, The Unofficial C++ Home Page is paradise. Aside from the full-screen image of C++ co-creator Bjarne Stroustrup, the site, at **http://ec.tmit.ac.jp/koyama/c++.html**, contains an extensive Frequently Asked Questions list.
- While there, you may want to take a peek at your future by reading a draft of a new C++ standard proposed by members of the ANSI and International Standards Organization governmental bodies.
- Another very detailed FAQ list can be found at **http://www.cis.ohiostate.edu/hypertext/faq/usenet/C++-faq/libraries/faq.html.**
- Enrique Urzais, a student at Florida International University, has amassed an impressive collection of File Transfer Protocol sites, newsgroups and World Wide Web resources to help beginning C++ programmers. Check out **http://www.fiu.edu/~eurzaio1/cpp.html.**
- People interested in building applications for the Web can glean tips for embedding Hypertext Markup Language comments into C++ source code at **http://www.atd.ucar.edu/jva/c++2html.html.**
- Finally, the Association for Computing Machinery has several special interest groups dedicated to particular languages. Go to the group's home page at **http://pauillac.inria.fr/SIGPLAN/** for information about how to join. Details about upcoming conferences and how to sign up for related newsletters are also there.

## Web products abound

Several World Wide Web servers and tools that target users building internal Web sites, or so-called intranets, were announced recently:

| Vendor/Product | Function | Availability | Price |
|---|---|---|---|
| **The Wollongong Group**<br>http://www.twg.com<br>Emissary Desktop and Emissary Office | A graphical tool designed to help PC users organize, store and publish information to the Web; Emissary Office includes terminal emulation and more application development capabilities | Emissary Desktop (now); Emissary Office (later this month) | $99 Emissary Desktop; $349 Emissary Office |
| **Open Market**<br>http://www.openmarket.com<br>Secure WebServer 1.1 and WebServer 1.1 | To host internal and/or external Web sites | Now | $4,995 Secure WebServer 1.1; $1,495 WebServer 1.1 |
| **Hummingbird Communications**<br>http://www.hummingbird.com<br>Columbus | Suite includes a Web browser, Web server, electronic mail and system monitoring tools | November | Not available |
| **Hewlett-Packard**<br>http://www.hp.com<br>Internet consulting program | Helps users design and build internal and external Internet applications | Now | $15,000 plus expenses for initial evaluation where HP assesses user's on-line goals and capabilities and recommends a blueprint |

# Net vendors push wares

By Bob Wallace
ATLANTA

**■ A slew of networking vendors used the Networld/Interop '95 conference here last week to showcase products designed to help users extend and better manage their internetworks.**

Leading the way were Cray Communications, Inc., which detailed a line of powerful and low-cost Ethernet switches, and Chipcom Corp., which added PC management wares and routing modules for its hubs.

**NEW FOR YOUR NETWORK**

INTERNETWORKING PRODUCTS ANNOUNCED LAST WEEK AT NETWORLD/INTEROP '95 INCLUDE THE FOLLOWING:

| VENDOR | PRODUCT | PRICE/AVAILABILITY |
|---|---|---|
| Cray Communications | MatchBox Switch | $240 per port up to 24 ports; $197 per port up to 36 ports/Not available |
| Chipcom | LANsentry for Windows | $1,495 for Statistical Analyzer; $2,495 for Packet Decoder/ 84 days after product announcement |
| | Routing modules | $2,855 base price/47 days after product announcement |
| Proteon | RBX 250 router | $3,300 for unit; $595 to $1,395 for software/Now |

Cray's MatchBox Switch is one of the first Ethernet switches with built-in Remote Monitoring (Rmon) capabilities that won't give users sticker shock. The switches ease network capacity loads by giving users dedicated bandwidth.

The MatchBox Switch is available in 24-port and 36-port models. The 24-port unit has two 100M bit/sec. Fast Ethernet uplinks; the 36-port model has one such uplink.

Priced at $240 per port for the 24-port model and $197 per port for the 36-port model, the products are "right down there with Fore Systems' [switches] as the lowest-priced switches with built-in Rmon support," said Michael Howard, president of Infonetics Research, Inc. in San Jose, Calif.

Chipcom's new management packages include LANsentry for Windows and Enterprise Tracking Module.

LANsentry comprises two applications, Statistical Analyzer and Packet Decoder, that enable users to manage the vendor's products from a PC rather than a more expensive Unix workstation.

Both applications use Rmon and enable users to capture traffic and view network traffic patterns from a remote console.

"Their management strategy has been too Unix-oriented, and ... many users can't [justify] Unix platforms," said Steve Flis, network manager at MetroWest Medical Center in Framingham, Mass., a 600-bed facility with more than two dozen Chipcom hubs.

Enterprise Traffic Analyzer lets users monitor "conversations" between data devices. Another new product, Traffic Generator, lets users transmit packets on remote LANs for stress testing and troubleshooting.

Chipcom also announced that it will build new routing modules into its switching hubs. This is the latest example of switch vendors building routing into their products, which could save users money.

Based on Cisco Systems, Inc.'s widely used Internetwork Operating System, the routing modules work with any Chipcom Oncore, Online or Onsemble switch.

# Novell's NEST to jump on existing power lines

By Laura DiDio

Novell, Inc.'s NetWare Embedded Systems Technology (NEST) is behind a new initiative designed to conserve power and lower costs. The idea is to let businesses and home consumers use existing power lines to transmit data and create efficient, "smart energy networks."

NEST, announced earlier this year, is Novell's method of taking core components of the NetWare network operating system and embedding them into consumer products — including fax servers, telephones and home appliances. The goal is to let both home and office users control these devices using NetWare via existing electrical lines. This would eliminate the need to install traditional network cabling.

### Working smart

The NEST Powerline technology will let businesses such as utilities and equipment and appliance manufacturers create a smart energy network.

NEST Powerline and applications based on the Smart Energy Network Interface will be available sometime next year, a Novell spokesperson said.

These networks will use existing power lines to transfer company data and fully automate and manage such routine tasks as controlling the temperature of air conditioners and refrigerators, said Darl McBride, vice president of Novell's Extended Networks Division.

"Any device you plug in to an electrical outlet can be added to the network," McBride said.

### Major market impact

Stan Schatt, LAN research director at Computer Intelligence Info Corp. in La Jolla, Calif., agreed, noting the NEST Powerline technology could have a major impact on the way certain vertical market users do business.

"It could, for example, let utility companies do away with meter readers; the networked software will read meters directly and then transmit information. Home users could deploy NEST Powerline to perform such functions as operating a cappuccino machine," Schatt said.

McBride said the NEST Powerline technology will also lower energy costs by maximizing efficiency and, in essence, enable consumers and businesses to become part of an "energy-buying cooperative group."

> Any device you plug in to an electrical outlet can be added to the NEST Powerline network
>
> — Darl McBride, Novell, Inc.

Schatt added that NEST Powerline is an extremely feasible technology that could catch on with businesses and home consumers in the next 12 to 24 months.

"Power lines do represent an existing infrastructure — so it's not far-fetched. The chips that would be used for NEST Powerline now cost about $10 each, but they should drop to about $1 in the not-too-distant future," Schatt explained.

### Picking teams

NEST Powerline technology is part of the Smart Energy Network alliance, an open industry consortium whose founding members are Novell and UtiliCorp United, Inc., a Kansas City, Mo.-based utility that supplies power to 17 states throughout the Midwest.

Spokespeople for Novell and UtiliCorp said they are forming a joint team to manage the NEST Powerline development and marketing functions. Currently, only Novell and UtiliCorp are members of the Smart Energy Alliance, but they hope to attract more utility firms.

## Briefs

### Secure EDI via the 'net

**Premenos Corp.** in Concord, Calif., has introduced Templar for Windows, a set of software and services designed to enable users to send and receive electronic data interchange documents (EDI) securely over the Internet. Templar for Windows 3.1 costs $449, and Templar for Microsoft Corp.'s Windows NT platform costs $5,990.

### What's in a name?

The registration of Internet domain names used to be free, but the **National Science Foundation**, which administers the system, is now charging $50 a year for existing registrants and $100 for two years for new registrants.

### New products from Bay

As expected, **Bay Networks, Inc.** recently announced the Model 5000AH, a 16-port Asynchronous Transfer Mode (ATM) switch with a 5G bit/sec. aggregate switching capacity for its System 5000 high-end switching hub. Also unveiled was the ATM Routing Engine interface for its Backbone Node router. The Model 5000AH will cost $40,875, while the ATM Routing Engine for the Backbone Node will cost $25,500. Both will ship by year's end.

### Open Market boosts servers

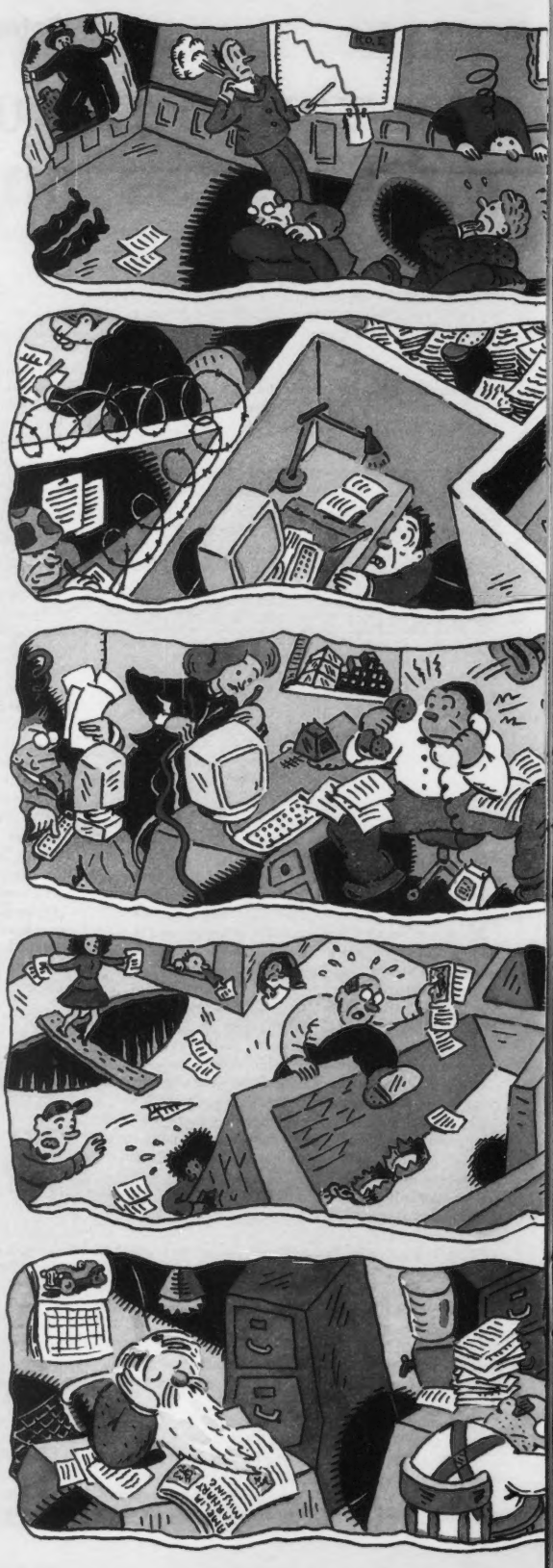
**Open Market, Inc.** in Cambridge, Mass., recently upgraded its three World Wide Web servers to include support for the Secure Sockets Layer security protocol and administration utilities designed to make maintenance of Web sites easier for information systems staffs.

### On-line economics

**Morgan Stanley & Co.**'s Web home page (http://www.ms.com) has added Global Economic Forum, a service that provides real-time economic analysis from economists in the U.S., Europe, Asia and Latin America. This includes daily updated equity market performance statistics and worldwide and regional industry sector performance measures.

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**Hilgraeve, Inc.** has introduced HyperAccess for OS/2, a communications program for IBM's OS/2.

According to the Monroe, Mich., company, HyperAccess for OS/2 provides OS/2 users with a set of communications capabilities, including automation and graphics support, and a library of on-line resources and utilities. Using the product's host mode, users can field calls from callers with modem software anywhere in the world. Callers can log on, upload or download files while the user is not there or is using the PC for other tasks.

HyperAccess for OS/2 is 32-bit code and was designed to take advantage of OS/2's multiple threads, semaphores and object-oriented graphical user interface. The product gives users Telnet access to the Internet, lists of ready-to-call bulletin board services, Internet service providers and more than 300 OS/2 bulletin board services.

HyperAccess for OS/2 costs $129.

▶ *Hilgraeve*
*(313) 243-0576*

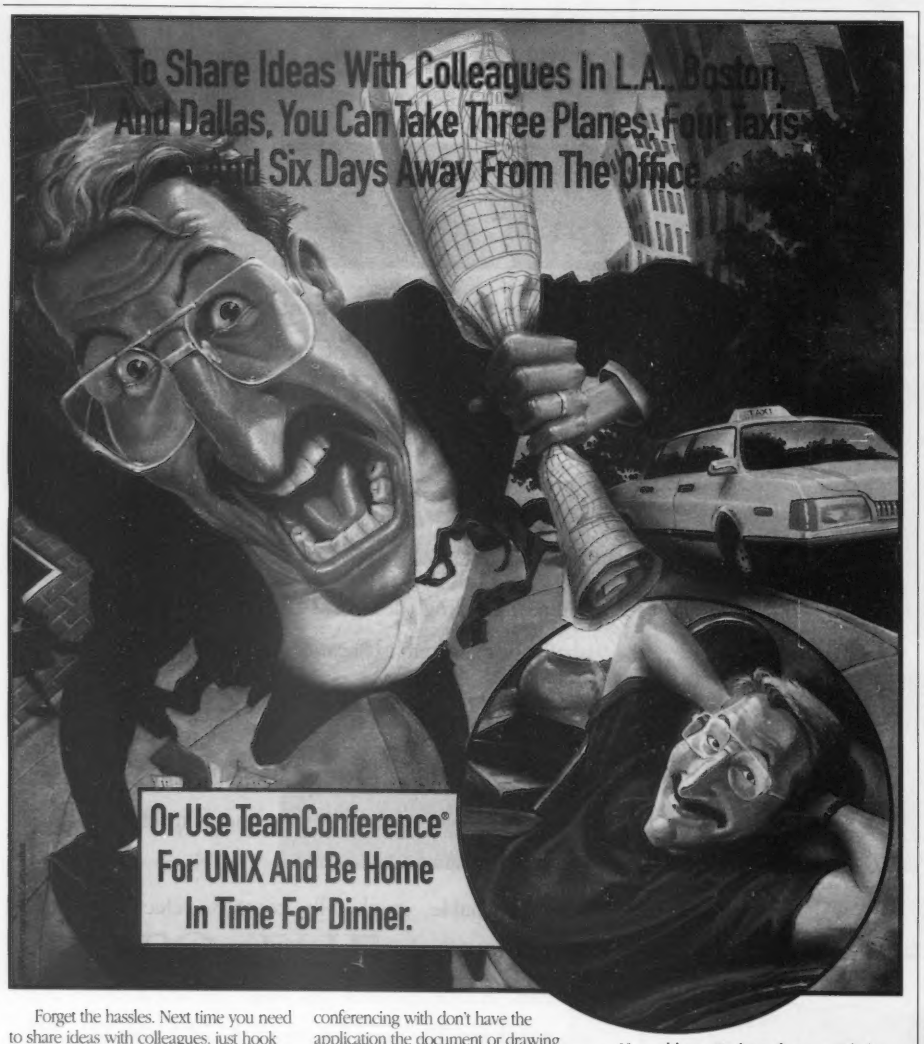
**Gilltro-Electronics, Inc.** has introduced PhoneMax, a product for voice communication over the Internet.

According to the Santa Clara, Calif., company, PhoneMax is integrated with Vocaltec Ltd.'s Internet Phone, a program that allows normal conversation over the Internet. It lets laptop, portable and desktop PC users add sound and music to applications, annotations and training.

PhoneMax attaches to the parallel port of any laptop or desktop PC. Its small dimensions were designed to enhance laptop and portable PCs.

Pricing for PhoneMax starts at $229.

▶ *Gilltro-Electronics*
*(408) 727-6422*




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# Sprint

CONTINUED FROM PAGE 71

"We've positioned ourselves for ATM; we knew it was the ultimate solution," said Steve Engel, network manager at Minnesota Mutual Insurance Co. in St. Paul. But until the company moves more fully into videoconferencing or expands its client/server applications, Engel is set. The company is using frame relay to run E-mail, Notes and certain client/server applications between 15 locations nationwide.

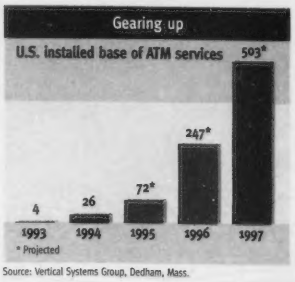
**Up, up and away**

ATM services and equipment sales are expected to jump from $96 million in 1994 to $1.2 billion in 1998, according to Vertical Systems Group in Dedham, Mass.

Sprint is hitting the market a good three to six months ahead of competitors such as AT&T Corp. and MCI Communications Corp., according to Beth Gage, an analyst at TeleChoice, Inc. in Verona, N.J.

While AT&T said it will have interworking service by the end of the year, Gage predicted AT&T won't have it ready until next spring.

She added that the beauty of the interworking service is that the carrier provides the protocol translations to allow an ATM switch to talk to a frame-relay switch. Because frame relay is deployed far more widely than ATM, users want a way to bring ATM into existing frame-relay networks, as needed, rather than having to make an all-or-nothing choice.




Source: Vertical Systems Group, Dedham, Mass.

PRAXIS UNWRAPS REPLICATOR, 84
JURY STILL OUT ON RAIT, 85

# Large Systems

HARDWARE • SOFTWARE • CORPORATE STRATEGIES

## HP widens reach, buys Convex

By Michael Goldberg

Hewlett-Packard Co.'s recent $150 million purchase of Convex Computer Corp. is giving some users a warm and fuzzy feeling.

Their Convex systems continue to work well with HP workstations and servers, and the Richardson, Texas-based supercomputer maker gains the backing of HP's distribution and sales infrastructure.

Users and analysts interviewed last week agreed that HP comes away with compatible high-end systems to complement its HP 9000 series of Unix-based workstations and servers (see chart).

**RUNNING PARALLEL**

With the purchase of Convex, Hewlett-Packard adds the following high-end parallel processing systems to its lineup of workstations and servers:

**HP 9000 SERIES**

- J class workstation, single- and dual-processor models
- MPS-10 clustered workstation, scaling up to 32 processors
- K class servers, scaling up to 4 processors
- T class servers, scaling up to 12 processors

**CONVEX EXEMPLAR SPP-1200**

- Scalable parallel processor model running up to 128 processors, with future models slated to reach 512 processors

All systems run on HP's PA-RISC processors and HP-UX

"It shows a commitment by Hewlett-Packard that their range of computing goes not only from the desktop to the high end but to the very high end and complex solutions," said Howard Crabb, director of advanced computer-aided engineering methods at Ford Motor Co. in Dearborn, Mich.

### Less worries for Convex

The deal binds the two companies in a way that assures users of Convex systems, such as the Exemplar SPP series, that their boxes will operate with other HP systems. The Exemplar, which scales up to 128 processors, runs on HP's PA-RISC chips and HP-UX, HP's version of the Unix operating system.

Crabb said 25 to 50 engineers at Ford's advanced technology office are evaluating auto design techniques on two Exemplar systems. HP's purchase of Convex, he said, "makes the transition from large models running on supercomputer technology down to workstations a smooth transition. Rather than worrying about code conversion and differences in computer architecture, we can worry about using the equipment to improve the quality of our product."

HP, *page 88*

## IBM tailors MVS for client/server

By Craig Stedman

With a new release of its MVS operating system, IBM has finally taken the mainframe to the point where it can flirt with the client/server crowd. Now comes the harder task of convincing non-System/390 users and developers to strike up a relationship.

MVS 5.2.2, which IBM shipped last month, contains added features meant to modernize the operating system and make it easier to fit mainframes into client/server environments. Key additions include increased support for Unix application programming interfaces (API) and a batch of object technology (see chart).

**Reaching out**

Release 5.2.2 of MVS includes the following features to make the mainframe an appealing development target:

- Support for more than 1,100 Unix APIs.
- OpenEdition shell interface with Unix look and feel.
- Compliance with Posix and base X/Open XPG4 specifications.
- Runtime version of IBM's object request broker.
- Built-in object class library.
- Support for C++ object programming language.
- Integrated LAN access and services software.

OpenEdition MVS, the portion of the software that provides a Unix look and feel for application developers, now embraces about 90% of the APIs defined in the industry standard Single Unix Specification. Processing overhead caused by those interfaces was also reduced in MVS 5.2.2.

### Tough sell for some

For big iron aficionados, the release is a step toward ensuring System/390 machines a continued place of prominence at the computing table. But getting Unix-oriented users excited about mainframes will take some hard selling by both IBM and corporate data centers, users and analysts said.

The client/server capabilities of MVS are "something we have to sell internally," said Michael Puldy, manager of resource management at Barnett Banks, Inc.'s information systems unit in Jacksonville, Fla. "Our Unix people know it's happening, but I don't think it's being taken very seriously by them. From their perspective, it's more of a prove-it-to-me attitude."

Barnett plans to start testing MVS 5.2.2 by year's end and will likely put it into production in March. Yet the bank's appetite is being whetted solely by enhancements in the operating system's support for clustering mainframes together in so-called parallel sysplexes, Puldy said.

The increased openness of MVS promises more transparent user access into mainframe databases, rather than having to transfer files from a System/390 to a smaller server, Puldy said. But whether the bank will make use of the server features "is all speculative now," he said.

"It's going to take a whole lot more marketing effort by IBM to convince people that MVS is a platform to run Unix applications on. Most people just don't have that mind-set now," said John Young, an analyst at The Clipper Group, Inc., a mainframe consulting firm in Wellesley, Mass.

One of IBM's main goals with the release is to make MVS ports easier to swallow for Unix software vendors.

"The single biggest inhibitor to the System/390 being accepted as a server has been a lack of applications," conceded David Tryon, manager of System/390 client/server and multimedia solutions at IBM. The changes in MVS 5.2.2 should make 1996 a pivotal year for attracting new developers, he said.

Marist College in Poughkeepsie, N.Y., expects to upgrade to MVS 5.2.2 early next year. The school eventually wants to take advantage of some applications that are now available only on Unix platforms, said Harry Williams, manager of programming at Marist. It also may be ready to use object technology at the mainframe level by late next year.

However, a more immediate benefit is "the ability to easily integrate MVS into the rest of our campus," Williams said. For example, a mainframe running MVS 5.2.2 will host a digital library that can be accessed by all of Marist's PC users.

## SAP answers plea for R/3 training

By Julia King

Caught off guard by the huge demand for its R/3 enterprise software, SAP AG is taking the offensive on both the training and support fronts.

The software maker said it has done the following:

- ▶ Tripled the size of its staff for its support hot line.
- ▶ Expanded its on-line help service to include remote consulting via video technology.
- ▶ Revamped training materials to include multimedia-based courses that users can take on their own time.
- ▶ Certified 400 new R/3 application and implementation consultants since January, bringing its U.S.-based complement of R/3 experts to 800.

Another addition is a pilot project under which SAP America, Inc. — which has traditionally kept a firm grip on the R/3 training and certification process — will train and certify 50 non-SAP employees in the company's ABAP 4 development language.

"We have to feed enough talent into the market so [that R/3 expertise] is not a scarce commodity," said Klaus Besier, president of SAP America.

**SAP's syllabus**

SAP's R/3

**Key changes in SAP's R/3 training program, which is available Jan. 1:**

- Fewer classroom hours and more multimedia, computer-based training time
- Implementation training sessions focused on companies' business processes rather than R/3 functions
- Overview training geared toward executives as well as implementation teams
- Case studies used during training will be provided to users, serving as an on-line frame of reference during the users' own configuration

Skyrocketing R/3 sales have made finding — and keeping — experienced consultants a nightmare for many companies. Simultaneously, the steady increase in R/3 customers has been a boon to information systems professionals with R/3 skills.

With 58 classroom facilities nationwide, SAP is currently training about 1,400 people a day in how to implement the complex R/3 enterprise business software. Many of these trainees are consultants from Big Six and other SAP-certified consulting firms that specialize in implementing R/3

SAP, *page 88*

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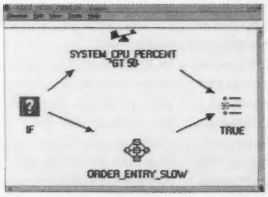
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|---|---|
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| ■ SunOS | ■ NetView |
| ■ HP-UX | ■ OpenView |
| ■ Windows NT | ■ Oracle/Sybase |
| ■ MVS Sysplex | ■ DB2/IMS |
| ■ NetWare | ■ MQSeries |



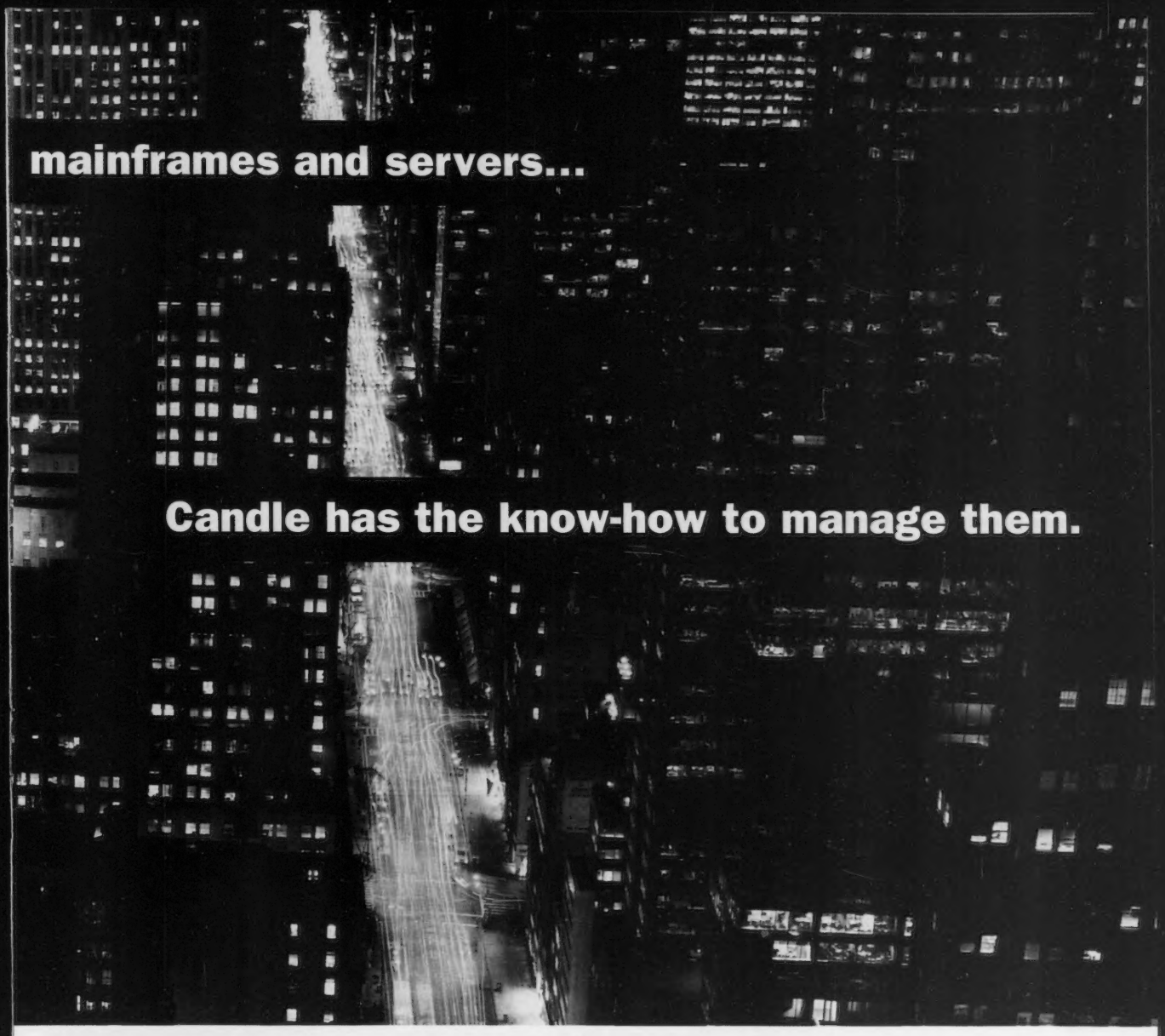

## Application Architecture

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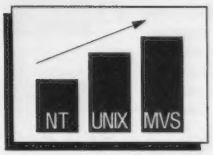

the fusion of Visual Programming with local or distributed inference engines for enterprise alert management.

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# Praxis unwraps replicator

## Offering smooths replication for companies with disparate databases

By Jean S. Bozman

Replication. The very word can worry a database administrator who has to handle updates among many database management systems scattered throughout a network.

But the problem of selecting the data to be updated — and deciding how often those updates will be posted — is compounded when a company uses more than one brand of database system.

Praxis International, Inc. in Framingham, Mass., is targeting the need for replication in companies that own many types of databases. In the process, it hopes to build its $38 million private firm, which was formed by an employee-leveraged buyout of the former Computer Corporation of America (CCA) in 1992.

Praxis' OmniReplicator, which shipped two weeks ago, handles replication among a wide variety of databases for decision-support and data warehouse applications (see box).

**Praxis' database replicator rollout schedule**

▶ **Update sources** — Oracle, Sybase, CCA's Model 204, IBM's DB2 (November 1995)

▶ **Update targets** — Oracle, Sybase, CCA's Model 204, IBM's DB2, Informix, Computer Associates International, Inc.'s Ingres, Oracle's Rdb

"Many customers have five or six different types of databases," said Russell Donovan, vice president of marketing at Praxis. "We're helping in the interoperability of all that."

A Windows-based graphical user interface lets database administrators modify the base product for use in a specific environment.

### Pulling it together

Analysts said most database vendors have replicators that work best within a single architecture. Even so, Oracle Corp. and Sybase, Inc. offer database gateways to other vendors' databases as well as their own replication software. Informix Software, Inc. said in July it would resell the OmniReplicator for cross-product replication.

One beta-test site, Thomson & Thomson, Inc., a trademark research firm in Quincy, Mass., found that using Praxis' replicator saved processing time.

"It was a nine-hour loading process from the order entry into the report database," said Ron Dalgliesh, information systems vice president at Thomson & Thomson. "We eliminated that process."

The firm used OmniReplicator to transfer data between an order-entry Sybase database and a second Sybase engine used for decision support and report writing. Installation took about a week, he said.

However, some analysts warned that continual posting of updates can create too much system overhead, slowing production systems.

"All these replication facilities have tremendous overhead," said Donald Feinberg, a database analyst at Gartner Group, Inc.'s Santa Clara, Calif., office. "It's noticeable, and the expectations of the user have to be set properly."

### The price factor

Feinberg also warned that pricing for database replication products may become highly competitive as database vendors compete to offer replication at no additional cost to users of their product.

"Praxis needs to exercise this product window and sell a lot of units right now, before the market heats up with a lot of free replicators," he said.

## The price advantage

Because it solves the commonplace problem of too many database types, Praxis has a price advantage as an independent supplier. In most cases, users have to purchase more than one replicator and glue them together as a custom update system.

"This is bargain replication," said David McGoveran, president of Alternative Technologies, a consulting firm in Boulder Creek, Calif. "It's mix and match, and that keeps the price low."

Prices for data extraction range from $12,000 for a workgroup server to $60,000 for a mainframe copy of the software. Prices for database "targets" — which receive the data updates — range from $5,000 for a workgroup server to $20,000 for a mainframe.

In the emerging database warehouse market, Praxis is competing with data extraction software firms such as Carleton Corp. in Burlington, Mass., and Prism Solutions, Inc. in Sunnyvale, Calif.

"It is off-loading the operational database for purposes of decision support," McGoveran explained. "So queries and reports that might have been going against the operational database will now go against [the data] in the data warehouse."

*—Jean S. Bozman*

## Briefs

### Digital sells unit

**Digital Equipment Corp.** has announced the sale of its Taiwan-based text-only terminal business to **SunRiver Data Systems, Inc.** in Austin, Texas. As part of the deal, SunRiver will supply terminals to Maynard, Mass.-based Digital.

### Equitable goes with CA

**The Equitable Life Assurance Society** in New York has selected **Computer Associates International, Inc.**'s CA-Unicenter systems management products to manage its 300 servers and 6,500 workstations across the U.S. Agreement terms weren't disclosed.

### Building a client/server highway

**SHL Systemhouse, Inc.** has been awarded a multimillion-dollar contract to develop a client/server-based highway construction management system for the **American Association of State Highway and Transportation Officials** in Washington. The project is being sponsored by the association as a combined development software effort by 18 state transportation departments and the Federal Highway Administration. It will include modules that member states can use to monitor contractor progress.

### Mainframes delayed

**IBM** has delayed deliveries of its new air-cooled mainframes by one to four weeks due to a shortage of the power supplies it buys from an outside vendor.

# Users give Oracle moves thumbs-up

By Dan Richman

PHILADELPHIA

Oracle Corp. is generally pleasing its users by moving beyond traditional database technology and into Internet hardware, video imaging and object-oriented development tools.

But the Redwood Shores, Calif., company must not neglect the imperfections of its core relational database management system, as one user at the recent International Oracle Users' Group meeting noted.




"It's still nearly impossible to roll back transactions to the point in time when they went awry, a facility that's imperative for any really essential database operation and is commonplace in mainframe DBMSs," said Bill Schray, a database administrator at Time Customer Service, Inc. in Tampa, Fla.

Oracle officials were vague as to when that gap might be filled, Schray said. They also couldn't say when another serious problem — lack of automated recovery facilities — might be resolved.

Ken Jacobs, an Oracle vice president, acknowledged that not even Oracle8 will be able to roll back individual tables or table spaces, but he said an entire database can easily be rolled back.

But on other fronts, users gave an approving nod to Oracle's direction.

"Where *isn't* Oracle?" asked one information technology executive from a major East Coast insurance company. "They're improving all the pieces and then putting them together. No other [DBMS] vendor is doing this."

Oracle is also getting into the hardware business. In addition to its forthcoming Internet browser and server software [CW, Sept. 18], Oracle will ship so-called network appliances early next year for $500, company officials said.

The devices, which lack any drives, are intended only for use on the Internet as cheap, simple alternatives to PCs.

Oracle Chairman Larry Ellison denied reports that Apple Computer, Inc. would be a development partner in creating the appliances, although he acknowledged that Version 3.0 of Apple's set-top box is already very similar to what Oracle has in mind.

### Attention-grabber

Drawing considerable attention at the conference was Sedona, the code name for a repository and framework claimed to allow development with a variety of mix-and-match objects, including those created using Microsoft Corp.'s OLE, the Object Management Group's Common Object Request Broker Architecture, Smalltalk, OpenDoc and the C++ language.

Now in pre-alpha testing, Sedona is tentatively scheduled for release by the end of next year.

Oracle also continues to emphasize the storage and retrieval of unconventional data. Oracle's Video Server, which went into beta testing Sept. 19 and is scheduled to ship by March 31, will add full-motion, high-resolution video to Oracle7 applications, said Farzad Dibachi, senior vice president at Oracle's New Media Division.

# Users wary about RAID spin-off

By Steve Moore

Faced with the requirement to back up more and more data in less and less time, some harried systems administrators are grasping at a new straw called Redundant Array of Inexpensive Tapes (RAIT).

RAIT evolved from Redundant Array of Inexpensive Disks, or RAID, technology. Both were designed to help users save time and money by avoiding data loss when storage media break down.

When a disk or tape drive in a RAID or RAIT array fails, the user can restore that data from an identical (redundant) copy on another disk or tape. Or, in both systems, stored mathematical codes can be used to reconstruct lost data in the absence of a complete, identical copy of it.

Four vendors that offer RAIT products are Andataco in San Diego, Data General Corp.'s Clariion division in Westboro, Mass., Storage Dimensions in Milpitas, Calif., and Symbios Logic, Inc. in Wichita, Kan.

**R&R**

**RAIT tends to be used for high-bandwidth backup, while RAID is used for on-line data storage**

| | RAID vs. RAIT | |
|---|---|---|
| Storage type | Disk | Tape |
| Independent access | Yes | Not at this time |
| Parallel access | Yes | Yes |
| Redundant data | Yes | Yes |
| Striping | Yes | Yes |
| Typical RAID level | 1, 3, 5 | 3 |

Source: RAID Advisory Board, St. Peter, Minn.

At Health Data Sciences Corp. in San Bernardino, Calif., the Clariion RAIT product "gives us a higher level of performance than anything we've used in the past in terms of the rate at which we can create a backup," said John Lauer, the firm's vice president of research and development.

The company uses Clariion tape arrays to back up very large databases of up to 100G bytes or more "in a small window of time, four times as fast as with traditional technologies," Lauer said. Another advantage is that operators interact with the backup system less often.

Users should "make sure that the data throughput of their backup utilities is adequate for the requirement for streaming all the tape devices in the tape array," said John Mettee, Clariion's director of marketing for storage products.

Unlike RAID, "RAIT tends to mean high performance rather than the ability to recover from a failed drive," said Joe Molina, chairman of the RAID Advisory Board, a storage industry trade organization in St. Peter, Minn.

Analysts agreed. Users could achieve a high level of fault tolerance by constantly keeping five tapes in position on five drives, "but if you're doing that, you might as well use a disk drive for random access instead of tape, which only gives you serial access," said Jim Porter, president of Disk/Trend, Inc. in Mountain View, Calif.

Some users were less than impressed with RAIT's slowness relative to RAID. RAIT "doesn't sound like something we would be interested in. We're going toward a more on-line storage system with a high degree of availability," said Richard Kilgore, director of technical services at Mary Kay Cosmetics, Inc. in Dallas.

Molina said one likely application for RAIT is "data capture when high bandwidth is required," such as when data transmitted by a satellite must be stored while it is passing overhead. In that case, many tape drives could support "enormous bandwidth" by "all operating in unison," he explained.

Another RAIT issue users should be aware of is that "it adds complexity to gain time savings by continuing backups automatically" when a tape drive fails, said Farid Neema, president of Peripheral Concepts, Inc. in Santa Barbara, Calif.

"Typically, when we had an important event coming up, we would rely on a mailing to our own database as the prime vehicle for getting the information to the people we had targeted.

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# HP deal

CONTINUED FROM PAGE 81

Founded in 1982, Convex has floundered in recent years as the market for supercomputers dwindled. Potential customers who had doubts about the vendor's viability seriously hampered sales efforts, company officials said.

But such doubts are history now that Convex has the backing of $25 billion HP, said John Logan, an analyst at Aberdeen Group, Inc. in Boston.

"Hewlett-Packard can use the functionality embodied in the Convex systems, when integrated with their workstations, to refresh their sales and to go after new sales opportunities" in markets for processing-intensive technical applications such as mechanical engineering, Logan said. The companies could move the Convex systems into commercial and Internet applications in the future, he added.

HP and Convex had been courting for three years. HP had a 5% stake in Convex, and Convex had committed to using HP's PA-RISC microprocessors in its systems. The terms of the sale mean Convex will be called the Convex Technology Center and will become a subsidiary of HP.

Willem Roelandts, senior vice president and general manager of HP's computer systems organization, said the Convex systems will be aimed at the technical market first and will gradually turn toward commercial markets.

Other companies, such as Silicon Graphics, Inc. (SGI), are strong in this field already, observers noted. For example, Agouron Pharmaceuticals in La Jolla, Calif., last year chose 50 SGI workstations and SGI's Powerchallege L parallel system with six Mips Technologies, Inc. R8000 microprocessors for its chemists.

A Convex shop since 1988, Agouron might have stuck with the company if the HP/Convex deal had happened earlier. "They were a little too late with this path," said John Kupec, associate MIS director at Agouron. "We didn't want to be pioneers with them."

# SAP R/3

CONTINUED FROM PAGE 81

projects. The rest are IS and business professionals from companies that have committed to purchasing the SAP software.

**Bad reviews**

Training up until now has been inadequate, according to the results of a 1995 SAP customer satisfaction survey and users who have participated in the sessions.

Jim Cross, a systems analyst at Aramco Services Co. in Houston, said his trainee group four months ago was so dissatisfied that it asked SAP for its money back and got it.

Among other things, "the teacher wasn't prepared and the system wasn't prepared" for a SAP course entitled "Corrections and Transports" in which Aramco had enrolled two of its staffers, Cross said.

Staffers returned from the training still unschooled in what they needed to know plus they lost the time spent in the SAP classes. As a result, "we just learned it the hard way by figuring it out on our own," Cross said.

Under its new training strategy, SAP doesn't plan to increase its classroom space. Rather, it will provide users with more computer-based training materials that they can tap into at their own offices. Previously, such materials were available only on a very limited basis, said Jeremy Coote, a SAP executive vice president.

Coote said SAP will also provide trainees with an overview of the entire R/3 system, rather than present the material in a piecemeal fashion. "The approach everyone wants is to see the total system first and then to drill down," he said.

Available as of Jan. 1, the new training should help ease what many users have described as a torturously long system implementation process with R/3, said Robert L. Scheier, a senior analyst at Hurwitz Consulting Group, Inc. in Wellesley, Mass.






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How are companies examining their return on client/server investments? Can it really be measured in hard dollar terms?

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**Careers Column:** Grooming technical managers for project management.

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**Ad Close: September 27**

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# Application Development

CASE • LANGUAGES • TOOLS

## Retraining, outsourcing rule the roost at Chase

### Upcoming Chemical merger means consolidation

By Thomas Hoffman
NEW YORK

Application development and integration will be hot points for The Chase Manhattan Bank NA and Chemical Banking Corp. as they begin to follow through on their $10 billion merger, announced last month.

Newly appointed Chase Manhattan Corp. Chief Information Officer Denis J. O'Leary plans to mix information systems staff retraining with application development outsourcing. He said he hopes to strike a careful balance between the massive systems consolidation the firm faces and the revenue opportunities that go along with being the nation's top bank in several key markets.

"The managerial challenge in these mergers is to run business as usual and not lose your position in the market," said O'Leary, 38. As CIO at Chemical, he helped orchestrate the fusion of IS operations between Chemical and Manufacturers Hanover Corp. following their 1991 merger.



**Future Chase CIO Denis J. O'Leary** *wants to combine IS training with application development outsourcing*

**Looking outward**

The new Chase will still need IS professionals with middleware, application programming interface and other skill sets to help guide the transition, but "we're not operating where we have to have every skill set in-house at all times," O'Leary recently told *Computerworld* in his first interview since the Chase/Chemical merger was announced.

That maps with Chemical's premerger application development strategy. Although the bank has doubled its IS training budget in the past three years, it also elected to outsource significant portions of its core application development. For example, when Chemical merged with Manufacturers Hanover, the bank tapped systems integrator Systematics Information Services, Inc. to develop and maintain its core retail applications.

While application outsourcing has become de rigeur among commercial banking giants, there are pros and cons to this approach. On the plus side, "the learning curve [on new technologies] is shortened because you benefit from other people's experience," said Colin D. McClive, president of McClive & Co., a New York-based financial services consultancy. McClive is a former vice president of private banking at Chemical.

It is more pragmatic to hire a third-party vendor to build a specialized application than to hire additional IS staffers whose future roles beyond the target project are unclear, according to Bill Bradway, a technology analyst at The Tower Group, a Wellesley, Mass.-based bank technology consultancy.

O'Leary agreed. "We're going to need a lot of expertise to plan this [merger] out at first. Then the bubble will start to dissipate," he said.

Still, there are disadvantages to tapping hired guns — such as the exorbitant consulting fees they demand, which typically start at $125 per hour. Companies also risk "losing the continuity of interface between [IS] and the end users unless it's managed closely," added Ladd Willis, executive vice president at First Manhattan Consulting Group, a New York-based financial services consultancy.

## Testing 1, 2, 3

### Tool set lets users test software running on servers, PCs and mainframes

By Frank Hayes

Client/server software is slow stuff.

Users say it takes a long time to develop complex client/server applications. When applications finally are completed, users say it is difficult to get reasonable performance from those that link desktop PCs, servers and mainframes.

"With the advent of client/server and GUI and Windows, there's more overhead and more middleware and machines involved. And subsecond response time has gone to 8, 10, 12 or 15 seconds per transaction," said Bob Wagenschutz, application development manager at Northern Arizona University in Flagstaff.

**Avoid the wait**

Hoping to help users dodge that kind of delay, Compuware Corp. in Farmington Hills, Mich., last week rolled out an expanded version of its Playback mainframe application testing suit. The tool set, Playback for Client/Server, lets developers combine tests of software running on mainframes, servers and PCs to find bottlenecks and problems that don't show up when components are tested individually. Compuware licensed the PC and Unix software from Mercury Interactive Corp. in Santa Clara, Calif.

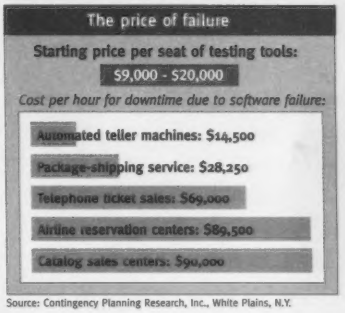
Compuware's Playback for Client/Server joins the new version of the Automated Testing Facility (ATF) from Softbridge, Inc. in Cambridge, Mass. ATF began shipping last month. Both tool sets let developers test hundreds of client PCs at once from a central console.

Bringing a mainframe-scale understanding to application testing is critical, users said, because testing one part of a client/server application, such as the user interface, isn't enough.

"You want to test the client windowing information. But if the actual application logic is on another server, you want to connect to that server and do some load and performance testing. To really do a complete test, you've got to test each aspect of it," said Len Penella, manager of quality assurance at ITT Sheraton Technology Center in Braintree, Mass.

Making software crash-proof is important because business losses can be high when major systems go down (see chart).

Just as critical is the ability to create and run tests quickly, said Rick Wade, an information management specialist at AT&T Corp.'s consumer services division in Dallas. Wade uses ATF to test the performance of a new client/server customer service system.




Source: Contingency Planning Research, Inc., White Plains, N.Y.

But there is still a ways to go in analyzing the information gained from client/server testing tools, said Chet Geschickter, vice president of Hurwitz Consulting Group, Inc. in Newton, Mass.

"There's a lot of good performance probes for the database engine or the operating system and good monitors for the networking environment. But they're all separate components," he said. "We haven't yet seen [a tool] that let's you say, 'Ah, it's this particular database table that's causing the problem.'"

## Briefs

### IBM buys Early, Cloud

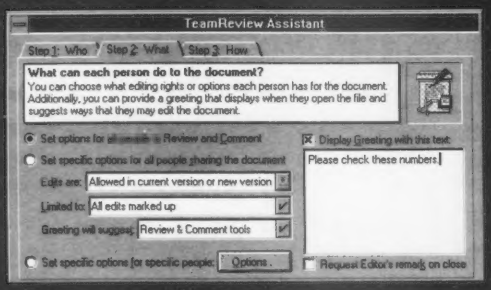
IBM agreed to take full control of **Early, Cloud & Co.**, a small Newport, R.I., company that makes middleware and application software for telemarketing and customer service call centers. IBM previously owned about 20% of the company. Early, Cloud's Callflow package works alongside IBM's CICS transaction monitor and MQSeries messaging middleware.

### Firms team to build Web apps

**NaviSoft, Inc.**, a division of **America Online, Inc.**, plans to integrate its World Wide Web development tools with San Francisco-based **Macromedia, Inc.**'s multimedia utilities to let users build audio-, video- and image-based applications for the Web.

### Visix adds database support

**Visix Software** in Reston, Va., recently announced DbSpectrum, a middleware system that lets users of Visix's Galaxy application development system connect their applications to **Oracle Corp.** and **Sybase, Inc.** databases. The new middleware, which includes a report writer, lets developers write to a single programming interface and change databases without modifying each application's code. DbSpectrum is shipping now. Pricing starts at $2,500. Pricing for the Galaxy development system starts at $9,600 per seat.







# All right, everybody. Pencils down.

Lotus

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MARCO ISLAND, FLORIDA 33969

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FAX
813/555-3522

JOHN M. JENNINGS
JOHN MCNEIL
REBECCA SAGE
PAUL CHEALIER

September 30, 1995

Arthur's on vacation until Oct. 15 - date it + send late that week.

Mr. and Mrs. Arthur Sweetser
126 Squires Road
Marco Island, Florida 33969

zip?

Dear Arthur and Cindy,

with Rebecca

I have reviewed your estate plan as reflected in your present Wills and the schedule of assets that you left with me. My comments and suggestions follow.

recently

Your present Wills provide the desired flexibility to determine after the first death the amount of marital deduction to be utilized in order to achieve the best federal estate tax result. A problem arises, however, by reason of the way you presently hold assets. In the event Arthur is the first to die, his two IRAs and Annuity would pass to pursuant to the beneficiary designations in place, leaving no assets with which to produce a taxable estate and utilize any of Arthur's available unified credit. While there will be no federal estate tax payable on Arthur's estate, the tax in Cindy's estate may well be higher than it needs to be by reason of the failure to use Arthur's unified credit.

COMBINED

attach designation

IS THIS TRUE? PLEASE CALCULATE

Can we insert a table here?

To illustrate the foregoing, using the values contained on your Schedule of Assets, and assuming Arthur dies first and that Cindy dies one year later with no change in asset values, arthur's gross estate for federal estate tax purposes would be $580,007.00 representing the sum of the two IRA accounts and the annuity. Assuming no administration expenses, there would be a marital deduction taken in the amount of $580,007.00 since each of the assets making up the gross estate pass to Cindy, producing a taxable estate of -0-. Upon Cindy's death, her gross estate for federal estate tax purposes will equal $2,432,012.00, representing the sum of the above assets received for Arthur, the investment account, her IRA, the primary residence, and the New

Can you give me some backup?

What are the chances of this?

# Programming transformation in the works

## Microsoft's IP technology one-ups object orientation

By Ron Condon
NEWCASTLE, ENGLAND

Microsoft Corp. is working on a software technology that it believes will revolutionize programming and the way languages are currently used, according to the company's chief programming guru.

"New language development has practically ceased, not because of a dearth of ideas, but for the pragmatic reason that legacy code needs outweigh any benefits that could reasonably be expected" from new languages, said Charles Simonyi, chief architect at Microsoft's Advanced Technology division in Redmond, Wash. Simonyi was speaking at the Future of Software conference here at Newcastle University.

Simonyi made public for the first time that Microsoft is working on an answer to this issue: Intentional Programming, or IP. IP is similar to object-oriented programming in that it relies on building a repository of reusable components. Simonyi said it goes further and could encompass an object and nonobject approach in the same system.

"It is not competing with object-oriented programming; it is one level up in the abstractions hierarchy," Simonyi said. "Object orientation is a specific language feature that has recently become available, and we can expect many new language features."

This potentially revolutionary technology is used at the giant software maker and is intended for market before the year 2000, he said.

With IP, developers can mix and match features from programming languages and eliminate the need to rewrite code for mission-critical legacy applications.

Programmers will be able to buy select components to gain features they want, without having to buy an entire package. "You'll be able to go into a components shop and pick and choose, just as you would with hardware," Simonyi said. "This has been a dream for many years."



**Charles Simonyi**, *chief architect at Microsoft's Advanced Technology division revealed a technology that could revolutionize programming*

IP can accommodate traditional computer language code and, therefore, doesn't require a complete rewrite of systems. Old code can be read into IP using language-specific parsing programs, which turn it into IP nodes.

Microsoft has already built an IP library of 1.7 million nodes comprising intentions, or intention instances. Since March, all IP development at Microsoft has been performed in IP.

Microsoft's plans include the creation of component, or intention, libraries, support for legacy languages and wider use of the technology throughout the company, followed by the full marketing of IP as a product.

"Any programming language possessing a fixed set of syntactic and semantic rules will be superceded — just as old dedicated word processors were obsoleted by personal computers," Simonyi said. He explained that the features in programming languages, present and future, can be expressed as intentions, which allows them to coexist.

Simonyi predicted that the fate of computer languages will parallel that of dedicated word processors of the early 1970s, which yielded to the general-purpose PC. IP, he said, will be like the PC in this context and support a multiplicity of continuously evolving intention libraries.

Condon is the London correspondent for the IDG News Service.

### The nitty gritty

Microsoft is far enough along with IP that Charles Simonyi, chief architect at its Advanced Technology division, was able to demonstrate it at the recent Future of Software conference.

The basic element is the intention, which defines the look, semantics and other behavior of some abstraction. This could be as simple as "I intend to add two numbers together and remember them," Simonyi said.

Simonyi showed how IP can maintain contributions from several programmers who may be working as a team or how the contributions could be loaded from intention libraries. The contributions are in the form of a tree of nodes, called the IP Source Tree.

Programmers work with IP via a graphical user interface, which displays the IP Source Tree and allows it to be edited on-screen. A programmer's "intention," becomes a specific node in the source tree. The nodes can then contain pointers to other parts of the program. Programmers can create pointers between nodes by drawing lines on-screen.

"It was very intriguing. I can't claim I understood it completely, but the demonstration was very impressive," said Brian Randell, a professor at Newcastle University who organized the conference. — *Ron Condon*

# JYACC's three-tier approach offers benefits on many levels

By Gary H. Anthes

JYACC, Inc. recently introduced several product upgrades to support its "three-tier application partitioning" strategy.

Three-tier applications are a client/server-related approach to development. A physical or virtual application server sits between the client machines and the database servers and mediates conflicting requests for data, sets priorities, ensures integrity and balances the workload.

**Partitioning strategy**

According to JYACC, the three-tier approach is especially appropriate for systems that have many users.

New York-based JYACC introduced a 32-bit version of its core product, JYACC Application Manager (JAM) for Microsoft Corp.'s Windows 95 and Windows NT. Priced at $2,400, it is a development environment that supports visual programming, object- and repository-oriented development and three-tier application partitioning.

JAM also supports development in Windows 3.1, Unix, OS/2, Macintosh and OpenVMS environments.

"JAM gives us portability and flexibility, and that's the essential criteria for us," said Jim Oliverio, president of Computer Systems and Services, Inc. in Tampa, Fla. The company develops applications for clients that use a wide variety of platforms, and it doesn't want to say no to any of them, Oliverio said.

JYACC also announced an enhanced version of the JAM/Transaction Processing interface to Novell, Inc.'s Tuxedo transaction processing development tool. JAM 7/TPI generates client screens to support complex database operations, JYACC said.

It also lets users construct virtual screens on an application server, just as they would build a graphical user interface for a client machine. These virtual screens accept service requests from the Tuxedo middleware, JYACC said.

The client version of JAM 7/TPI costs $750 to $2,000, and pricing for the server piece starts at $4,000, depending on the operating system.

**High hopes**

Chet Geschickter, vice president and director of research at Hurwitz Consulting Group, Inc. in Newton, Mass., said the claims for three-tier application partitioning are difficult to evaluate.

"What they are hoping to provide developers is higher productivity and flexibility, but you have to keep in mind how much complexity you are creating," he warned.

JYACC also unveiled an enhanced version of its Report Writer targeted at nonprogrammers such as project managers. Report Writer will ship in November and costs $750 for Windows versions and $6,000 for Unix versions.

**And the winners are . . .**



**U.S. finalists of the Object Applications Awards** *presented Aug. 16 at Object World. They are (behind, left to right): Leslie Russel, Naval Computer and Telecommunications Station in San Diego; Greg Smith, Boeing Defense and Space Group; John May, Blue Cross/Blue Shield of Oregon; Rino Perrella, MPR Teltech Ltd.; Ahmad Asaadi, AlliedSignal Aerospace Technology. Front: Frederick Kuhl, The Mitre Corp.; Daniel Scholz, IBM Switzerland; Greg Frierson, IBM Credit Corp.; Phil Headley, Los Angeles County Sanitation District; Paul Evans, Canadian Imperial Bank of Commerce.*

**Phar Lap Software, Inc.** has introduced two products for developing real-time applications: TNT Realtime DOS-Extender 8.0 and TNT Embedded ToolSuite (Realtime Edition) 8.0.

According to the Cambridge, Mass., company, both products were designed to make building embedded applications as easy as building DOS or Windows programs. The products support standard tools and platforms, including 32-bit compilers from Borland International, Inc., Microsoft Corp. and Watcom International Corp.; embedded cross-debugger versions of Microsoft Code View and Borland Turbo Debugger; and Intel Corp.'s 386, 486 and Pentium microprocessors.

TNT Realtime DOS-Extender 8.0 helps developers build real-time embedded applications on the DOS platform using mainstream compilers, debuggers, drivers and runtime libraries. It supports Win32 synchronization objects, including semaphores, mutexes, pipes and event methods. And it has real-time features such as pre-emptable disk and keyboard drivers, interrupt-driven mouse and printer drivers and priority-based threads.

TNT Embedded ToolSuite (Realtime Edition) 8.0 is a real-time development system designed to help developers create read-only memory or flash-based embedded programs using standard 32-bit compilers and tools. It includes a Phar Lap-developed real-time kernel with support for threads, priority scheduling and interthread communications.

The product supports multitasking and various types of Win32 synchronization objects. The kernel includes the Visual System Builder, a Windows utility that creates a skeleton program for customizing the kernel. This lets developers set up a kernel's configuration and simplifies the process of setting up the target processor.

Pricing for TNT Realtime DOS-Extender 8.0 starts at $995. Pricing for TNT Embedded ToolSuite (Realtime Edition) 8.0 starts at $4,995.

▶ *Phar Lap Software*
*(617) 661-1510*

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**Software Research, Inc.** has introduced STW/Coverage 3.0 for Unix.

According to the San Francisco company, STW/Coverage 3.0 for Unix was designed for developers and testers working on host-based, client/server and embedded product environments. The product helps determine how well products have been tested through a variety of textual, graphic and tabular reports.

STW/Coverage 3.0 permits the coverage analyzer to support all standard versions of C and C++ programming languages for Unix platforms, including Sun Microsystems, Inc., IBM, Hewlett-Packard Co., Digital Equipment Corp. and Silicon Graphics, Inc. It also supports Windows platforms. The product fully supports templates within C++ and is thread-safe. It has an error-checking feature to identify syntax errors and lets developers correct them before continuing. It provides branch and call-pair coverage (used primarily for integration testing) for C and C++.

Pricing for a single license of the branch and call-pair coverage analyzer starts at $4,125.

▶ *Software Research*
*(415) 957-1441*

**Vmark Software, Inc.** recently announced Universe Objects, an OLE custom control.

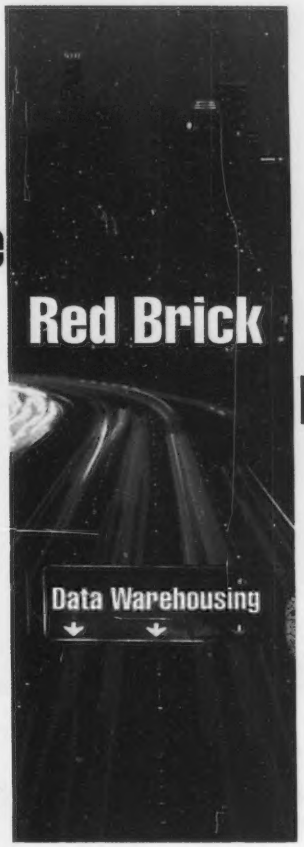
The Westboro, Mass., company said with Universe Objects, data reflects the nature of business objects, such as customer orders. It removes database complexity for developers, freeing them from having to code complicated data access routines and think about the physical structure of the data.

Universe Objects supports application partitioning for creating multitier, client/server applications and includes exceptional handling features.

Universe Objects is available as part of the Universe Software Development Kit.

It costs $395 and includes a two-user database server license.

▶ *Vmark Software*
*(508) 366-3888*


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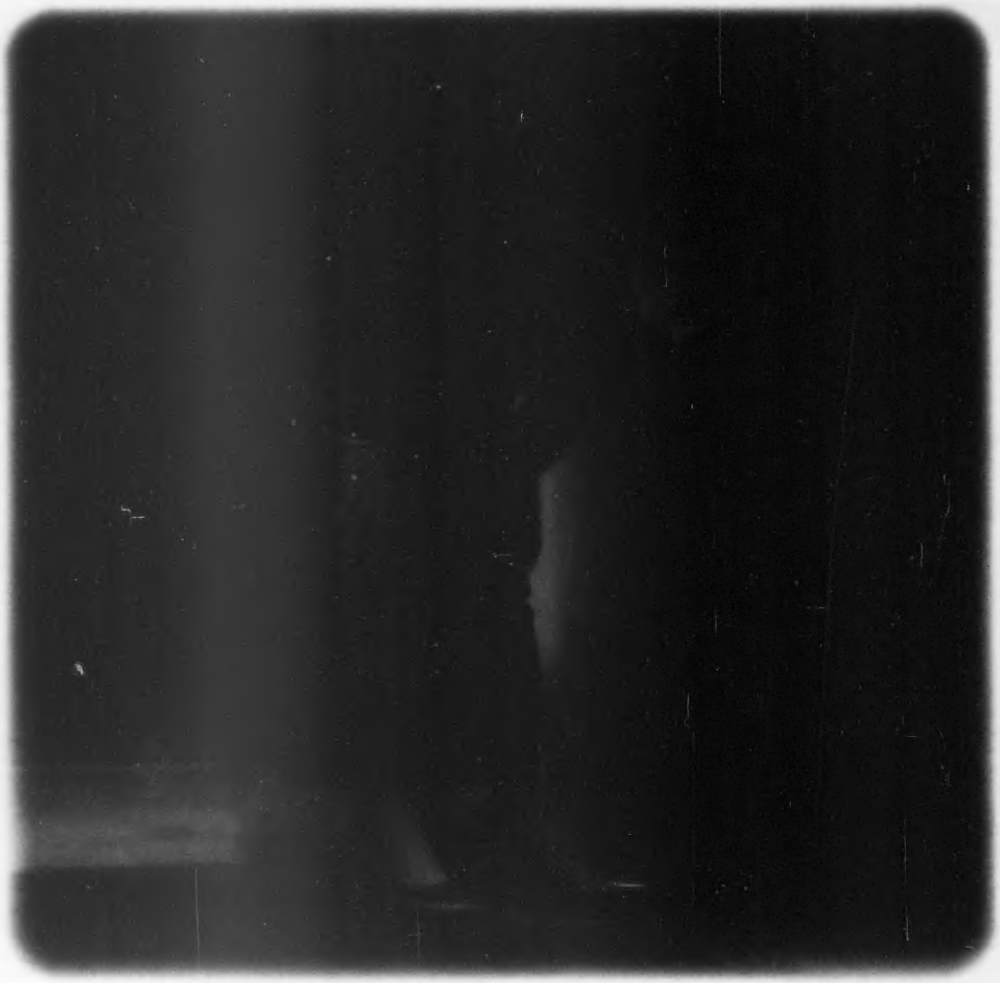
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FINANCIALS HUMAN RESOURCES MANUFACTURING DECISION SUPPORT

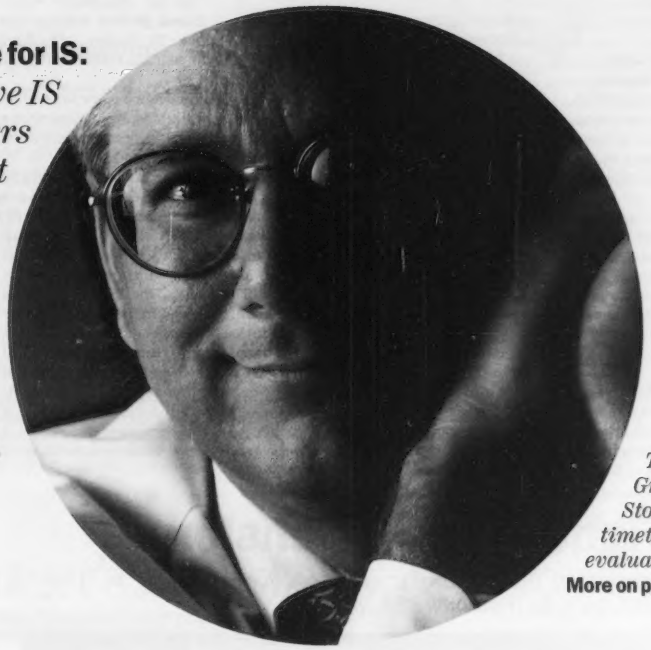
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# Management

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# Windows 95
# The hype stops here

**Score one for IS:** *Proactive IS managers kept Windows 95 mania in check at their companies. Here's how they did it.*



*The Vanguard Group's Dave Stoltzfus: Gave a timetable for evaluation, adoption.*
**More on page 100.**

Kevin Rivoli

**Nagui R. Matta didn't just sit back and let the megabuck advertising campaign for Windows 95 whack him between the eyes. He met Microsoft Corp.'s media blitz head-on with a strong, official statement against early adoption.**

"The user expectations were there, but in this facility, we nipped them in the bud. We said, 'We are not going to commit en masse to Windows 95 until we have a chance to evaluate it,'" says Matta, chief engineer for information technologies at Eaton Corp.'s Corporate Research & Development Center in Southfield, Mich.

By Steve Alexander

The hype surrounding Windows 95 forced information systems managers at all levels to manage user expectations by making it clear they weren't going to swiftly adopt, or provide technical support for, the new operating system.

**Many IS managers carried out a strategy of first-strike memorandums and meetings that preceded, or coincided with, Windows 95's introduction. Those efforts, they say, kept user demands for quick adoption to a minimum. They rechanneled user enthusiasm into IS-planned migration schemes. Those who didn't prepare users for the Microsoft juggernaut have spent hours answering questions from users.**

"I don't resent what Microsoft is doing with publicity. It's just the rules of the game. But there's no question that it makes us manage user expectations," says Dave Stoltzfus, assistant vice president of advanced technology at The Vanguard Group, a mutual fund firm in Valley Forge, Pa.

### IS executives take action

Vanguard's technical review team, led by Stoltzfus, wanted to head off hype-driven reactions to Windows 95. The team distrib-

**The hype,** *page 100*

## The hype

CONTINUED FROM PAGE 99

uted a memo to management and technical employees on Aug. 24, the operating system's release date. The memo outlined a timetable through year's end for evaluating Windows 95, running pilot projects for selected power users and making recommendations about adoption. Stoltzfus says the slow-and-deliberate approach is appropriate, especially because it will cost Vanguard about $2 million in hardware and software to upgrade its 2,000 desktop PCs to Windows 95.

The cautious strategy minimized user pressure for quick adoption, Stoltzfus says. "There is not this sense of angst that says, 'Oh my God, we'll just miss the whole boat if we don't have a more aggressive plan.'"

A different first-strike tactic was used by J. Matthew Merrick, vice president of information systems at Merrick Printing Co. in Louisville, Ky. He quickly asked top management at the 130-employee company to approve the purchase of a limited number of copies.

"We're not immediately upgrading everyone and spending tens of thousands of dollars, but we're not saying [that] we don't want it, either," Merrick says. "Internally, none of our people are banging at the door, although there have been some casual requests."

### Midlevel managers plan

Mid- and lower-level IS managers also took steps to counter the Windows 95 push. Vaughn Bradley, director of product support at Baltimore Gas & Electric Co. in Baltimore, scheduled a meeting early in August with corporate middle management. He wanted to discuss the advantages, disadvantages, features and functions of Windows 95 and Microsoft's Windows NT. IS then sent letters on Aug. 24 to all business managers. The letters suggested that no upgrades be made to the operating system on the company's laptop and desktop PCs until 1997.

> *"I don't resent what Microsoft is doing with publicity. It's just the rules of the game. But there's no question that it makes us manage user expectations."*
>
> **DAVE STOLTZFUS, assistant vice president of advanced technology at The Vanguard Group in Valley Forge, Pa.**

"We expected people to respond to the Microsoft hype, and they didn't," Bradley says. "But if we hadn't tried to educate users and management on what to expect, we'd have had many, many requests to deal with."

At the University of Kentucky in Lexington, the IS staff released a five-page position paper just before the release of Windows 95. It said the university hoped to support Windows 95 in about 90 days. But first, IS had to learn whether Novell, Inc., Sybase, Inc. and other key software vendors were supporting the new operating system.

### Planning position

The IS department at Boston Edison Co., a utility in Boston, issued a position paper two days before Microsoft's announcement. John Dubiel, manager of planning and technology, says the paper explained that IS officials would consider the operating system next year.

"We said, 'This is a 1.0 release, guys. We have reliabilities of 99.5% for our desktops now, and we will not be anywhere near that with Windows 95,'" Dubiel says. As a result, his department has had few inquiries.

Steve Cook, manager of IS architecture in the commercial aircraft division of Northrop Grumman Corp. in Dallas, says quick adoption of Windows 95 was made more unlikely by the company's established, go-slow strategy and tight IS budget. Northrop Grumman has 3,000 desktop machines.

"We did advance work to head off user expectations. We put together a strategy for a fairly conservative and orderly rollout," Cook says.

**One thing's for sure: Windows 95 certainly won't be the last software package to be marketed like cornflakes or painkillers — just wait until Intel Corp. unleashes the successor to the Pentium chip.**

**The lesson for IS managers is clear: You can manage user expectations if you get out in front of Madison Avenue. But if you wait until the advertising onslaught hits, tell your significant other you'll be getting home late for a while.** ■

Alexander is a freelance writer in Edina, Minn.

## All calls come to those who wait

**Some managers who opted to wait for users to ask questions about Windows 95 are getting plenty of them.**

**"I'm getting a lot of calls from people who ask, 'What can it do?' 'What would you do?' 'What do you think?'" says Bob Landolfi, director of sales technology at Scott Foresman, a division of Harper Collins Publishers based in Glenview, Ill. "At this stage of the game, I'm pretty reactive because I have as little information as the users do."**

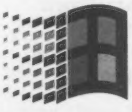
**"I spend an hour every day answering questions about it," says William Lazaldi, systems analyst at Evergreen Hospital Medical Center in Kirkland, Wash. Lazaldi says others in his IS department spend a similar amount of time fielding queries. "I tell them, 'You'd better be prepared for problems.'"**

**Josh Mayes didn't get out in front of the Windows 95 announcement. Now he's doing his best to catch up to it with an informational campaign. Mayes, an IS administrator at MDB Information Network, a Dallas-based independent supplier of technical and pricing information on hospital information systems, has been showing users news articles he reads about the benefits and pitfalls of Windows 95.**

**"I highlight the problems so they will not go along with the hype about 32-bit multitasking. . . . Most of them don't know what [that] means anyway," he says. "I've got users taking Windows 95 classes when, honestly, they need to be taking Windows 3.1 classes because they don't know how to use that."**

**Sometimes even the best plans fail. Michael Couture, LAN manager at ABB Environmental Services, Inc., an environmental consulting firm in Portland, Maine, says his company sent an E-mail message to employees a few days prior to the Microsoft announcement. It explained that "we would not be moving to Windows 95 in the foreseeable future," he says. A similar memo was sent the day after the Windows 95 introduction.**

**But users apparently didn't heed the message. "You get mixed reactions. Some understand, and some just want to do it right away," Couture said.**



## Fighting hypertension

*IS managers found many ways to get their message heard over the Windows 95 hype*

| Company | What IS said | How IS said it |
|---|---|---|
| Eaton Corp.'s Corporate Research & Development Center | "We'll evaluate it first." | Distributed strong early memo against adoption. |
| Merrick Printing | "We'll buy a few copies now." | Asked top management for early approval. |
| Baltimore Gas & Electric | "We'll wait until 1997." | Met with user managers early then released memo on data. |
| University of Kentucky (Lexington) | "We'll offer it in 90 days if practical." | Released five-page position paper just before release. |
| Boston Edison | "We'll consider it next year." | Drafted position paper two days before release. |
| Northrop Grumman | "We'll take it slow but steady." | Reminded users early of budget constraints. |

Intelligence Files

# CIOs to staff: Befriend your customers, or else

**Getting techies to focus on their customers and their company's business is the top human resource issue in IS, CIOs say**

Want to get ahead in information systems? Keep this in mind: IS executives aren't just talking about getting their staffs to be business-minded.

IS honchos say choosing and rewarding good managers is the second most important human resource issue in the profession. By comparison, providing for technical specialists is in 10th place.

Those are the findings from a recent study of IS human resources issues by Robert A. Zawacki, president of Zawacki and Associates in Colorado Springs. He received responses from 214 chief information officers and directors of IS.

Training and skill development concern IS managers, the rankings indicate, as does getting users to take on more IS-related tasks.

According to Zawacki, comments from respondents suggest the key challenges for IS organizations in the 1990s are finding ways to implement effective change within and outside of IS, how to redesign the IS organization and how to reward the behaviors they want.

### Top 10 Human Resource Issues in IS

1. Re-orienting IS from emphasizing technology to emphasizing customers and business.
2. Selecting, training and rewarding managers who are good business managers.
3. Defining skill requirements for the future IS environment.
4. Preparing strategies to transfer certain tasks to users.
5. Increasing IS staff emphasis on conceptualization and innovation.
6. Encouraging IS managers to retool and retrain their people.
7. Finding new ways to motivate individual contributors.
8. Providing training in communication and teamwork.
9. Developing better performance measures.
10. Providing for technical specialists; developing dual career paths.

**Source: Survey of 214 chief information officers and directors of information systems in April/May 1995 by Robert A. Zawacki, Zawacki and Associates, Colorado Springs. Responses were evenly distributed among large, medium-size and small IS departments; slightly more responses were received from manufacturing and financial institutions than from software and communications firms. Respondents were asked to rank 20 human resource issues in IS.**

IS Executives

## Hey, That Ain't Bad!

**44** *hours a week*

That's the average workweek of the five "successful" chief information officers profiled by Charlotte S. Stephens, an associate professor at Columbus College. That's 12 hours a week less than the 111 large-company CIOs profiled in 1988 by researcher Eugenia Brumm. Nice to know someone is working fewer hours these days.

**Source: *The Nature of Information Technology Managerial Work: The Work Life of Five Chief Information Officers* by Charlotte S. Stephens (Quorum Books, Westport, Conn.)**

Workplace safety

## Guard against repetitive stress

**Every IS manager knows PCs can be a pain for users, but a new book and CD-ROM can help them find and correct causes of keyboard injuries**

In his book *Zap!: How Your Computer Can Hurt You — and What You Can Do About It* (Peachpit Press, (800) 283-9444; 160 pages, $12.95) author Don Sellers says managers need to do more than teach employees good posture and proper hand positions. He gives advice on how to involve employees in designing their workspace and selecting computer equipment and furniture.

More help in preventing muscle injury can be found in "Stretch-ercise," a CD-ROM put together with advice from Dr. Robert Gamburd, one of the team physicians for the San Francisco 49ers football team. (Available in Windows format from IMSI; (800) 833-8082, $39.)

"Stretch-ercise" offers 36 exercises to help relieve stress or relax muscles (presented in five-second video clips that play in a postage-stamp-size window on your computer screen). The program is also available on 3½-in. disk. Now if only you didn't have to be working at your PC to use it...

Resources

## Organizational model for IS jobs

**New guide from DPMA helps IS managers define jobs and set requirements**

The Data Processing Management Association (DPMA), an organization for IS professionals, is offering the Industry Structure Model guide to IS jobs. The guide includes 10 skill levels that cover all tiers of an IS organization, from unskilled to a senior manager or director. More than 200 job definitions are outlined, along with individual entry-level requirements, tasks and attributes of a specific job.

For a limited time, the guide is available to corporate IS managers for $995. Contact: DPMA, c/o Sheri Fox, Director of Professional Development, 505 Busse Highway, Park Ridge, Ill. 60068; (708) 825-8124, ext. 225. The price for colleges and universities is $450.

Training

## SIM forums groom IS leaders

**Ambitious midlevel IS managers can develop the right stuff at the annual SIM learning forums**

Dates for the 1996 Regional Learning Forums have been announced by The Society for Information Management (SIM). The forums offer intensive leadership and personal skills development. They will be held from January to October in several cities across the country.

Contact SIM Headquarters, 401 North Michigan Ave., Chicago, Ill. 60611-6610; (312) 644-6610; fax (312) 245-1081.



## IS Manager's Bookshelf

*New books, videos and CD-ROMs*




### Version 2.0: More BYTE-ing Humor from The 5th Wave

By Rich Tennant

Maybe we're a little biased — Tennant is a regular *Computerworld* contributor — but if you can read his second collection of "5th Wave" cartoons without cracking a smile, you must be a space alien.

This book is the one sure way to salvage a day when nothing goes right. *(Andrews and McMeel, Kansas City, Mo.; 104 pages, $6.95)*

*— Allan E. Alter*




### Negotiating Business Equipment Leases

By Richard M. Contino

This book offers plenty of hard-nosed, practical advice for managers who lease business equipment.

If you want to understand the tricks of the lessors' trade and negotiate better leasing deals, this book is worth checking out even though it isn't specifically geared to computer leasing. Contino is an attorney and consultant who specializes in equipment leasing and financing. *(McGraw-Hill, Inc., New York; 287 pages, $39.95)* *— Allan E. Alter*

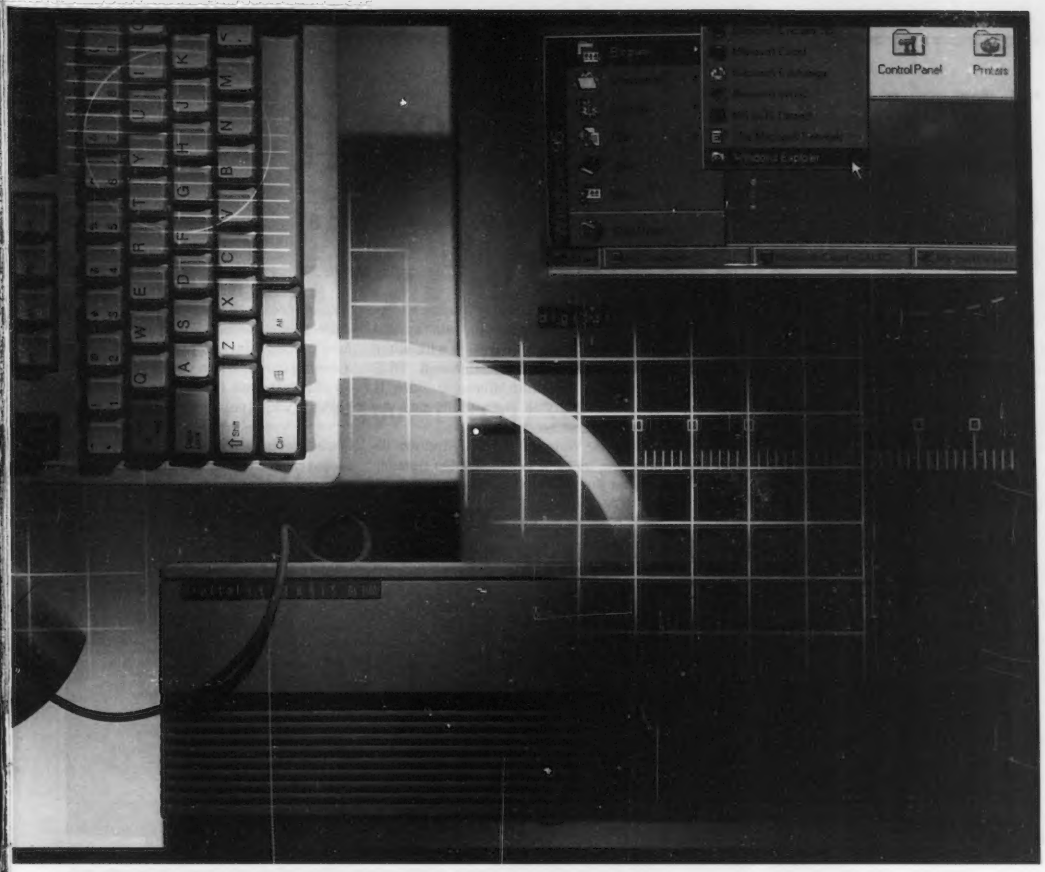
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REVIEW
POWER TOOLS
PERSONAL TECHNOLOGY FOR IS MANAGERS

# Visio lets you see it

## Visio 4.0 is the latest release of a nifty drawing package aimed at managers and other users who don't draw for a living

By James M. Connolly

Set aside the snob appeal factor for a moment. You know, the rule that says software should be hard to use for it to be worthwhile.

If you are a manager — not a power-user wannabe — many of today's applications can be a waste of time. You don't want to spend hours keying numbers into an electronic telephone book or formulas into a spreadsheet. And relational databases just don't relate. You want software packages you can turn on, use and see immediate benefits.

**Visio 4.0**
***Visio Corp., Seattle***
**Suggested retail price: $249**
**Upgrades: $79**

Visio Corp.'s Visio 4.0 may be just such a program. The company designed its drawing package largely for IS managers and others who don't draw but need to produce organization charts, diagrams and maps. It features templates for network diagrams, workflow charts, office designs, mind-mapping diagrams, project time lines and total quality management diagrams. Visio also offers a more complex product called Visio Technical 4.0.

The funny part about Visio software is that it works as advertised, or at least it worked in a quick mini-review.

It took 30 minutes to load Visio 4.0 on an Intel 486DX 66-MHz machine running Windows 3.1. The process involved juggling 12 diskettes. Another 15 minutes was wasted trying to add Visio 4.0 icons to Microsoft Excel and Word and complete a fax-back registration form. None of the latter efforts worked without calling technical support, but none were crucial; we didn't need the Excel and Word links, and snail mail still works for registration.

Five minutes after completing installation, we had drawn a rough road map to our new offices. This was without using the tutorial or help files. Working with Visio 4.0 is as simple as clicking on the map icon and dragging shapes — straight roads, intersections, curves, buildings and gas stations — from an on-screen palette into a scaled grid. You can add text to your drawing and establish relationships among shapes. Visio 4.0 offers more than 2,000 shapes.

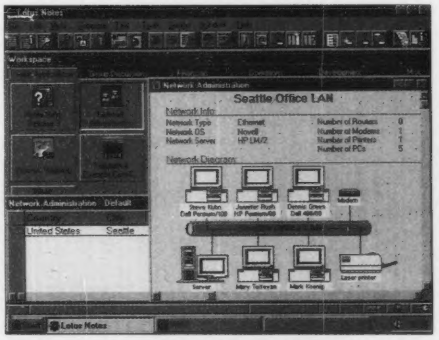
Clearly, to become more proficient with Visio 4.0 and develop more complex drawings, you should work with help files, the manual or the 16-minute tutorial. Working with Visio 4.0 under Microsoft's Windows 95 lets you take advantage of the tighter integration with other applications through Microsoft OLE technology, including Microsoft Office. It adds the ability to share diagrams via Notes.

Loading Visio 4.0 onto a Windows 95 machine using a CD-ROM also demonstrates the benefits of Windows 95 and CD-ROM. Installation took only five minutes.

Moving up to a new class of diagram, we built a basic organizational chart in just 30 minutes. To show names, titles and reporting structures, you use a "glue" capability to establish relationships between shapes representing people.

Visio 4.0 teaches us a lesson about software design. Managers who don't have the time or patience to experiment with a program won't explore its advanced features, or even try the basics, if just getting started promises a steep learning curve. When you open Visio 4.0 for the first time, it tells you right away, "Here is what I can do for you." ■

Connolly is *Computerworld*'s technology evaluations editor/CW Guide. His E-mail address is james_connolly@cw.com.




**Visio 4.0 features templates for organization charts, network diagrams, workflow charts, office designs, mind-mapping diagrams, project time lines and total quality management diagrams**

# Calendar

MANAGEMENT

**CIO Perspectives.** Orlando, Fla., **Oct. 15-18** — Theme: The Psychology of Information Technology: The CIO's New Mind-set. Sessions include: "Understanding Personality Differences Among Executives: Using Myers-Briggs to Build Relationships;" "The Last Frontier for Competitive Advantage: Optimizing the Involvement of People in the Business;" "Walking the Information Technology Tightrope: Balancing Life Cycle Costs, Business Needs and Evolving Technologies;" and "Re-engineering the CIO Mind-set." Fees: $1,395, information systems practitioners and executives; $1,695, government and military personnel; $5,000, sales, marketing and consulting personnel. Contact: CIO Communications, Inc., Framingham, Mass. (800) 366-0246.

**Intelliquest Brand Tech Forum Three.** San Jose, Calif., **Oct. 16-17** — Sessions include: "How to Get Your Brand Wired-In With the New Technology Generation;" "The Science of Technology Branding;" "Get Connected: Branding On-line;" "Branding Your Product in Interactive Media;" and "Best Practices in On-line Marketing." Fee: $1,100. Contact: Intelliquest Brand Tech Forum Registration, Austin, Texas (800) 580-9884.

**Open Computing & Server Strategies Conference.** Hilton Head, S.C., **Oct. 16-18** — Focus: Helping users and vendors struggling to manage evolving technologies. The conference will look at best practices for implementing and managing database, server, middleware and distributed I/O trends as well as architectural planning, rightsizing, data warehouse infrastructure and transaction processing. Contact: Heather Whiteman, Meta Group, Inc., Stamford, Conn. (203) 973-6715.

INDUSTRIES

**National Association of Computer Consultant Businesses' Eighth Annual Conference.** Palm Springs, Calif., **Oct. 18-22** — Theme: "Continuous Improvement: Making the Changes That Make Things Happen." Keynote address by Sheila Sheinberg, president of the Center for Lifecycle Sciences, on "Focusing on the Change Imperative and the Dynamics." Contact: National Association of Computer Consultant Businesses, Greensboro, N.C. (910) 294-8878.

USER GROUPS

**1995 Enterprise Networking Customer Symposium.** Minneapolis, **Oct. 16-18** — Focus is on Channelink and Britton product lines, integrating legacy and open systems and designing end-to-end networking solutions for the 21st century. The three-day program offers introductory sessions, hands-on tutorials and customer presentations. Contact: Computer Network Technology, Cambridge, Mass. (617) 498-2300.

**InterAction Wang User Group Conference.** Boston, **Oct. 17-20** — Keynote address by Bill Ferry, president of Wang's service business. Topics include: Wang integration services, virtual storage enhancements, coexistence and migration options and open software solutions. Contact: Wang, Billerica, Mass. (508) 975-5333.

**15th Annual Eastern America AT&T/NCR/ADDS Computer User Conference.** Bushkill, Pa., **Oct. 18-20** — Focus will be on Microsoft Corp.'s Windows NT, Unix technologies plus general computer and management subjects. Contact: Frank Whalon, Tinius Olsen Testing Machine Co., Willow Grove, Pa. (215) 675-7104, ext. 216.

TECHNOLOGIES

**Real World ATM.** San Francisco, **Oct. 16** — Also offered Oct. 19 in Dallas. Topics include managing highly complex networks, integrating Asynchronous Transfer Mode (ATM) into the existing network, the business case for ATM, side effects of ATM and killer applications. Contact: The Yankee Group, Boston, Mass. (617) 367-1000, ext. 460.

**POWER '95: The Third International Conference on Power Requirements for Mobile Computing and Wireless Communications.** Santa Clara, Calif., **Oct. 16-18** — Keynote speakers: John K. Medica, vice president of portable products at Dell Computer Corp.; Shane V. Robison, vice president and general manager of the personal interactive electronics division at Apple Computer, Inc.; Dennis F. Strigl, president and chief executive officer of Bell Atlantic Mobile Systems; and Jim Valerio, director of mobile labs at Intel Corp. Contact: BIS Strategic Decisions, Inc., Norwell, Mass. (617) 982-9500.

Calendar announcements should be submitted at least six weeks prior to the event and include the title of the event, dates, location, theme or focus, keynote or major speakers, principal topics and a contact person, organization and phone number.

SEND ANNOUNCEMENTS TO

**David Weldon, Associate Editor/Management, Computerworld, 375 Cochituate Road, Framingham, Mass. 01701. Fax: (508) 875-8931.**

# In Depth

# WHAT? Microsoft WEAK?

## It may be a powerhouse today, but authors of a new book say Bill Gates' baby needs to watch its step if it wants to stay on top

*By Michael A. Cusumano and Richard W. Selby*



MARCOS SORENSEN

**BOOK EXCERPT**

History is against Microsoft. Companies with 80% market shares (which Microsoft has for PC operating systems and the Office applications suite) usually have only one way to go, and that is down. Few firms that dominate one generation of a product continue to dominate the next generation. Dominant companies often become so complacent, arrogant or attached to their existing investments that they become vulnerable to major shifts in customer needs or technologies or to threats from more nimble competitors.

In particular, market positions based on de facto technical standards seem unlikely to endure in a fast-moving industry for more than a few years.

The computer industry is full of companies — IBM, Digital Equipment Corp., Wang Laboratories, Inc. — that failed to sustain their market advantages.

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Like any company, Microsoft Corp. has many actual and potential weaknesses:

**Microsoft's dependence on Bill Gates as the company leader.** It is an understatement to say that Microsoft has done well by this "weakness" so far. But it remains to be seen whether any one person can deeply understand the broad range of technologies and new businesses that Microsoft is now into as a company.

Gates launched Microsoft by seeing the future ahead of his peers or at least acting with more conviction and deftness. But in Microsoft's new businesses, Gates has many more complex scenarios to consider; there are many more (and some very large) competitors compared with when Microsoft was establishing its position in the 1970s and early 1980s. Gates is no doubt right that consumer software and the information highway will be huge areas of future growth. But it isn't clear that Gates and his senior management team understand how to exploit these and new technologies and business opportunities better than anyone else.

The extent of Gates' advantage beyond desktop software remains an open question.

A related concern is Gates himself — his attention span as well as longevity and potential succession. He remains the undisputed leader of Microsoft, and it has often required the full force of his personality to get different Microsoft groups to cooperate. Gates has stated that he expects to head Microsoft at least for the next 10 years, and then to take on a lesser role in the company. Whenever he leaves the post of chief executive officer, he probably won't stray too far and will certainly remain on the board of directors.

Nonetheless, there will be a huge vacuum at the top that will be difficult to fill. There isn't one obvious person likely to carry on wherever Gates leaves off.

A more immediate danger is that Gates has already spread himself and Microsoft too thin, with too many businesses and personal invest-

**What? Microsoft weak?,** *page 106*

Excerpted from *Microsoft Secrets: How the World's Most Powerful Software Company Creates Technology, Shapes Markets and Manages People* by Michael A. Cusumano and Richard W. Shelby. Copyright 1995. Reprinted by permission of The Free Press, an imprint of Simon & Schuster, Inc.

# WHAT? Microsoft WEAK?

CONTINUED FROM PAGE 105

ments to follow all of them with his usual intensity. At least one veteran Microsoft observer has even asked whether the Intuit, Inc. acquisition attempt suggests that Gates is "going soft."

Gates and Microsoft once had the will to take on every player in PC software, doing whatever was necessary to win: They challenged Digital Research, Inc., the maker of CP/M, with DOS. They overtook Lotus Development Corp. and 1-2-3 with Multiplan and Excel. They topped WordPerfect with Word. They defied Apple Computer, Inc. and the distinctiveness of the Macintosh by building Windows. They challenged Novell, Inc.'s NetWare, various other versions of Unix and IBM's OS/2 with Windows NT. They are heading for a direct conflict with on-line network providers by marketing The Microsoft Network along with Windows 95.

In contrast, Microsoft launched Money to challenge Intuit's Quicken, then tried to spend over $2 billion to acquire the company — greatly upsetting competitors and antitrust regulators. After opposition from the Department of Justice, Microsoft managers decided that this acquisition wasn't worth the trouble and money. But we wonder why Gates didn't insist earlier that his people make more of an effort to turn Money into a successful product.

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**Microsoft has weaknesses in its middle management corps.** Microsoft tends to promote developers into management positions based primarily on their technical skills and accomplishments rather than managerial skills. Microsoft also grew so quickly in the late 1980s and early 1990s that very young developers took on extraordinarily great responsibilities, such as managing multimillion-dollar and even billion-dollar businesses. Some developers have met the challenge of general management, but they may be exceptions. This is a serious problem because in almost any firm middle managers make the organization work.

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**Interdependencies associated with Microsoft's efforts to promote more sharing across its product groups.** In the past, separate business units have been able to focus their attention on one competitor and one product, and they have had all the resources needed to build and deliver their own products. This isn't the case any longer. Furthermore, managing two or three interdependent projects simultaneously is far more complex than managing one project at a time, which Microsoft is still trying to master. More interdependencies will likely result in more product delays and product compromises, at least until Microsoft gets all its key groups marching in step together. Many products are only as good — and only as timely — as their weakest component.

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**Microsoft has relied primarily on incremental innovations to compete.** Occasionally, it bunches these innovations together, combines them with some new technologies and introduces new products that make old ones obsolete. Microsoft's Windows 3.1, Windows NT and Windows 95 all appear to be radical innovations compared with any version of MS-DOS. Yet the underlying technologies as well as the style of development and product introduction still represent mostly incremental innovation.

Though it should be enormously successful as a product, even Windows 95 is similar to the 10-year-old Macintosh operating system. It also builds extensively on Windows 3.1, with MS-DOS code still present within the system and some features borrowed from Windows NT.

In the past few years, Microsoft has created new divisions for advanced consumer products, an on-line network and research; it has also established dozens of partnerships and made numerous acquisitions. But the company remains vulnerable to competition from more specialized firms that are better at inventing new technologies or introducing innovative products for new markets. These companies have included Intuit with Quicken in personal finance software, Novell with NetWare for office networking and Lotus with Notes for office groupware.

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**Overdiversification and declining market focus.** Microsoft already has some 200 products and dozens more under development, ranging from games for children to video server systems for telephone and cable television companies. This is such a broad expanse of products and markets that, surely, Microsoft can't pay equal attention to all these diverse customers. There is real danger that Microsoft will lose its focus and ability to build its core products — desktop operating systems and applications.

The philosophy of bang for the buck helps people concentrate on the largest, most profitable markets. This, however, isn't a customer-centered or technology-centered focus; it is about money. Already, we can see Microsoft having problems keeping up with Macintosh applications, one of its strongest markets. Windows products now have priority, and Microsoft bases Macintosh versions on core code designed primarily for Windows.

With forethought and planning, this approach can work well, as in the case of Excel; done clumsily, it can alienate customers, as in the case of Macintosh Word 6.0. We expect Microsoft to improve Word and other Macintosh applications out of sheer pride, if nothing else. This incident, however, may be indicative of problems Microsoft has paying attention to small (but important) markets.

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**Products that contain more features (or new features, in the case of product upgrades) than users really need.** This is less true for systems products, although even Windows 95 has an abundance of new functions that have taken far longer than initially planned to develop, test and debug.

A preoccupation with features encourages projects to underemphasize the importance of the underlying product architecture. Without a good architecture to define how components interact, it can become extraordinarily difficult and time-consuming to rework, test and debug all the features that teams add or change. Like features, architectures need periodic updating to make it easier for teams to add new features or extend the capabilities of a product.



But intense pressure to add features and get products completed quickly takes time away from refining and evolving product architectures.

Feature proliferation also causes products to grow unnecessarily in terms of memory and power requirements, and projects often change half of the code from one product version to the next, introducing defects and increasing testing requirements.

If projects placed more emphasis on refining the existing architecture and feature designs early in each project, they would probably change and rework less code. Testing and debugging features would be easier, and the long-term product architecture would have a more coherent structure from the viewpoint of developers and users.

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**The scope of user testing that Microsoft still needs to do.** For Windows 95, Microsoft launched an unprecedented beta test that involved up to 400,000 customer sites examining prerelease versions.

This type of information comes too late to make major changes in a product. It's useful to detect problems that average users might encounter with different combinations of hardware and applications programs.

Microsoft's in-house testers could never hope to replicate these user scenarios in a reasonable amount of time and at an acceptable cost; nevertheless, the Windows 95 beta-testing effort is an exception in the company (and in the industry).

Microsoft has also run into problems with products such as MS-DOS 6.0 and Macintosh Word 6.0 that earlier and more extensive testing with customers and different user scenarios might have detected. Part of the problem is within Microsoft: It has sometimes relied too heavily on its own nontypical employees for feedback on products before commercial release. It needs to test all of its products in a manner that resembles how the average person will use those products. ■

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Cusumano teaches the strategic management of technology at MIT in Cambridge, Mass. Selby teaches information and computer science at the University of California at Irvine.

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| | The Community of People You Join |
| • Update on Diversity | |
| • Applicant Tracking | |
| 9:15 a.m. - 12:10 p.m. | How To Pick The Right People |
| 12:15 p.m. - 2:00 p.m. | The Top 10 Trends Affecting Information Systems Careers |
| 2:10 p.m. - 3:05 p.m. | Repeat of Concurrent Sessions |
| 3:20 p.m. - 5:00 p.m. | Town Hall Forum |
| 5:00 p.m. | Program ends |



**How To Pick The Right People**
**9:15 a.m. - 12:10 p.m.**
*Dr. William Swan*
Learn the latest in how to pick the right people from Dr. William Swan, a nationally recognized expert in interviewing and performance appraisal. Dr. Swan conducts interview selection seminars and workshops for major corporations and government agencies and has personally trained over 25,000 managers to conduct more effective interviews.



**The Top 10 Trends Affecting Information Systems Careers**
**12:15-2:00 p.m.**
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*Paul Gillin, Executive Editor, Computerworld*
Sure, there are new skills entering the market every day, but what are the top 10 trends you should really keep an eye on? Paul Gillin, one of the country's leading watchers of the Information Systems profession will give you an up-to-the-minute view in this very special keynote address.

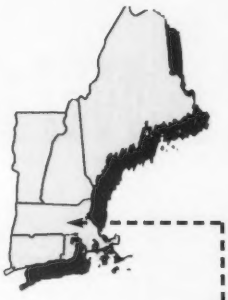


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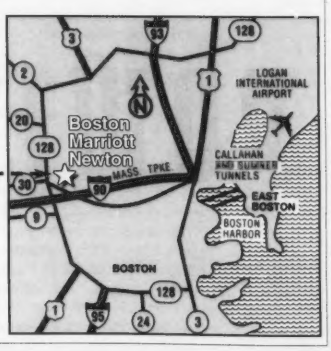


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# Computer Careers

# Don't BANK on it yet

## Electronic commerce may bode well for banks and customers, but it's still unclear how IS roles will change as a result

By Julie Hart

Electronic commerce — the process of conducting commercial transactions electronically over a network — is still in its infancy.

But experts predict that by 1998 the electronic marketplace will grow tenfold, from today's estimated 10,000 companies to more than 100,000 corporate participants. Many of these firms are expected to be from the banking industry.

Officials at BankAmerica Corp. in San Francisco say interest in using the Internet as a delivery channel is rising because of its global reach, broad availability and relatively low cost.

To test the waters, BankAmerica recently launched a pilot application with Lawrence Livermore National Laboratory in Livermore, Calif., to conduct financial electronic data interchange (EDI) transactions over the Internet. The BankAmerica/Lawrence Livermore EDI pilot lets users insert standard EDI transactions inside secure electronic-mail envelopes and send these envelopes over the Internet.

When complete in January, the pilot could open the door for BankAmerica and its trading partners to conduct business over the Internet. What's more, "the evolution of electronic commerce and other commercial delivery systems demands a new set of professional skills," says James Moore, president of Mentis Corp., a banking research firm in Durham, N.C. This is true for any bank planning to enter the Internet arena.

At BankAmerica, several experts were needed to make the pilot a reality. The bank needed a staff member who understood public-key cryptography and digital signature to ensure that Internet transactions were secure. It also required someone experienced in Unix programming because most of the system was created in Unix on Sun Microsystems, Inc. hardware. In addition, BankAmerica needed a telecommunications expert to design and implement a TCP/IP interface between the Internet and the bank's internal electronic commerce system residing on a Tandem Computers, Inc. host.

> **"Those left at the banks will spend more time managing multiple partnerships in an increasingly hybrid market. They'll become masters at integration."**
> James Moore, president, Mentis Corp., Durham, N.C.

Professionals with architectural skills are an important part of implementing electronic commerce, according to Art Gillis, president of Computer-Based Solutions, Inc., a consultancy in New Orleans. "Someone must take responsibility for the grand scheme," he says. "And that requires a thorough understanding of modern languages such as C++, data warehousing, telecommunications, client/server and database systems."

"Getting people with these sorts of skills isn't a problem," says George Cheng, senior vice president of BankAmerica's electronic delivery services. "What is more of a concern is how we, as an industry, build an infrastructure to handle [secure] electronic commerce."

Cheng says BankAmerica's move into electronic commerce means more opportunities for information systems personnel. For example, the bank will need more telecommunications professionals and people who understand security issues.

Analysts agree that skills don't have to come from in-house staff. With the coming of electronic commerce, many jobs, such as those in the security and telecommunications areas, are likely to migrate to consulting firms and vendor organizations, Moore says.

BankAmerica officials agree that understanding how to link technologies, for instance, is important to building a security firewall into a server that is linked via TCP/IP to the Internet.

Cheng also says BankAmerica's entry into the electronic marketplace doesn't mean it will put mainframe experts out to pasture. Even as banks build Unix-based systems to support electronic commerce over the Internet, they will need professionals to maintain IBM mainframe systems.

Gillis agrees, citing the fact that 60% of what bank IS staffs do is maintain legacy systems. He also says, however, that "if you really want to be on top and get the six-figure salary," you need to learn the new technology that enables electronic commerce, such as Unix, telecommunications and security.

That doesn't mean you have to drop your Cobol skills. "Don't be surprised if widespread Internet use is still a decade out," Gillis says. "In my experience, though, the people that come out ahead jump on the bandwagon early." ■

Hart is a freelance writer in Merced, Calif.

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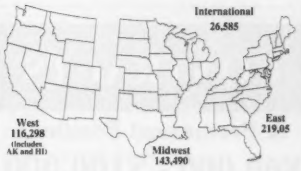
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# WEBwise

*Web page development is a nice short-term specialty, not a long-term IS career*

By Alan Radding

Has your information systems group jumped on the World Wide Web bandwagon? Depending on whose pronouncement you hear, thousands of new home pages are being created every month, day and hour. While a large percentage are personal home pages, many are corporate.

The IS role in these home pages is still evolving, and evidence suggests that IS professionals will play very particular roles in the Web phenomenon. But at this early stage, the Web isn't fueling much demand for permanent IS staff.

"In the last eight months, we've had two requests for people with World Wide Web skills," says Mary Kay Hamm, principal at Romac International, Inc. in Valley Forge, Pa. And those two requests were from vendors building Web products, not user organizations.

### Testing it out

At this point, corporations are just dabbling and not hiring Web professionals. "We don't see companies putting many resources into the World Wide Web, with rare exceptions," Hamm says. In fact, she says she isn't convinced that the Web will ever generate much of a corporate IS career. It looks more like something for freelancers who will produce Web pages on a per-project basis, she says.

Instead, opportunities for IS people fall into the areas of maintaining the network and Web infrastructure and, down the road, creating and maintaining the interactive links to the organization's databases when the Web becomes a vehicle for capturing transactions.

Initially, however, it appears that organizations are using their own IS talent to build Web pages or are contracting the job out. Despite the media's attention to very complex Web pages — such as live video hookups or complex, interactive games embedded in Web sites — most corporate home pages resemble more mundane informational brochures, consisting of text and graphics with a few interactive links thrown in.

One area that appears to be quickly moving out of IS hands is Web page content creation and maintenance. This involves Hypertext Markup Language (HTML) coding of the documents that compose the content of a Web site.

"The content is something that should be out with the end users," says Graham Stalley, vice president of software development at Boston Financial in Boston. Stalley developed Boston Financial's prototype Web pages as a proof-of-concept exercise, but he says he expects to turn over development of the content, including the HTML coding, to end users.

"Programmers were the first to build home pages, but they lack the marketing and communications skills required," says J. D. Grinnell, vice president of Tri-House Group in Scituate, Mass., a technology-oriented marketing communications firm. Grinnell, who comes from a marketing and graphic design background, has built home pages and taught himself HTML in the process.

And it will only get easier for people from the business side. Add-on products for Microsoft Corp.'s Word or Lotus Development Corp.'s Notes automatically translate a current document to the HTML format. The next releases of word processors and other content-creation tools will most likely include built-in HTML coding.

Where does all this leave IS professionals? There are still some career Web opportunities in corporate IS, particularly in maintenance of the Web server and creation of the interactive database links.

"There will be a need for IS to deploy and maintain the Web server hardware and software," Stalley says. Web servers must be planned, deployed, secured and managed like any other server. In addition, IS will continue to maintain the network infrastructure that supports the Web server and user access to the server.

The second big opportunity for IS is just emerging — interactive database links. At present, the Web is used mainly to provide information to users. But that will change as the Web evolves and companies attempt to conduct transactions over the Web.

"Companies that want to get information from Internet users will need to design forms and update databases with that information," Stalley says. The forms development tools and database processing may eventually become automated enough for end users but for now require professional IS programming. ■

Radding is a freelance writer in Newton, Mass.

## RESOURCES

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**http://home.mcom.com/home/manual_docs/**
Provides extensive information on building Web pages; geared toward Netscape browsers

**http://gnn.com/gnn/wic/comput.toc.html**
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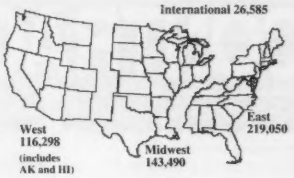
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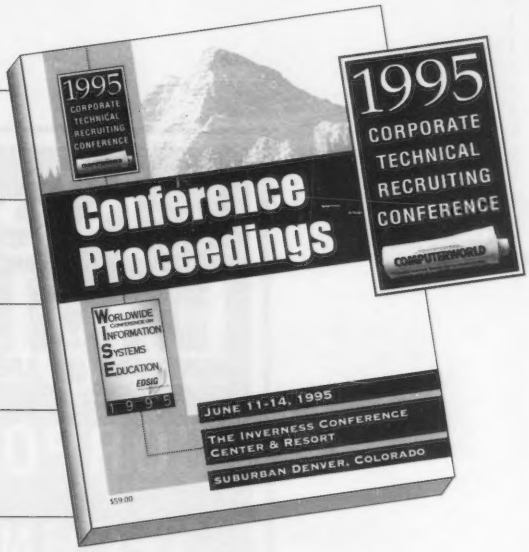
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# Marketplace

# Pentium price watch

*75- and 90-MHz Pentiums still the best deals until early next year*

By Lynn Haber

Competition in the Pentium market is fierce. That's good news for shoppers: The deals vendors are offering will make it easy to get good product value for the dollar. Bottom line prices are stable, but users can expect to get more power for the same amount of money.

For the corporate desktop, there's no reason to buy anything other than an Intel Corp. Pentium-class processor, says Martin Reynolds, director of technology assessment at Dataquest, Inc.

What's hot today are 75- and 90-MHz Pentiums. These processors can be bought for as little as $1,500 direct from vendors such as Dell Computer Corp. and Gateway 2000, Inc. or as much as roughly $2,000 from Compaq Computer Corp., according to Joe Ferlazzo, senior analyst at WorkGroup Technologies, Inc. in Hampton, N.H. Typical configurations include a monitor, 8M bytes of RAM and a 200M- to 400M-byte hard drive.

Prices for 100-MHz Pentium machines start at $1,700. And the 120-MHz processor, one step up, starts at around $2,000, he adds. Both Dell and Hewlett-Packard Co. offer products at that price mark.

It's still early in the game for 120-MHz processors — analysts expect those machines to gain attention early next year. "There's no huge push right now for the high-end Pentiums," says Matt Sargent, an industry analyst at Computer Intelligence InfoCorp in San Diego.

In next year's first quarter, 100- and 120-MHz Pentiums will push out 90-MHz-based products. Higher-speed processors, such as the 133-MHz chip, are likely to be found only on the desktops of speed freaks willing to pay $2,500 to $3,000 or more, depending on add-ons.

In a few months, as higher-speed processors move into the mainstream desktop space, expect prices to remain stable and PC configurations to include those more powerful processors, larger hard drives and more memory, analysts say.

Industry analysts agree that some of the best deals in the market can be found in HP's Pentium product line. "HP is pricing their products very aggressively, and buyers get a quality product from a vendor with a solid service and support track record," Reynolds says.

Vendors such as HP, Dell and Gateway were among the earliest proponents of Pentium and as a result have gained market share, he says.

HP's actions serve as an example of how aggressively vendors are pricing Pentium PCs. Back in July, HP offered a 75-MHz product for $1,900. The vendor now prices its 120-MHz machines at $1,999, only $99 more.

IBM and Compaq rebounded from their early marketing faux pas of not pushing Pentiums as hard as some other vendors and are now top-tier Pentium suppliers with high-performance, well-tuned boxes, Reynolds says.

Both vendors have a loyal installed customer base in the corporate marketplace, and Compaq is the biggest player in the business market.

NEC Technologies, Inc. is extremely aggressive in the retail channel, Ferlazzo says. In fact, the company incorporates full-motion video capability into its PowerMate corporate desktop line.

AST Research, Inc. is also aggressive in this market. It is trying to gain a presence after some financial difficulties.

Direct channel vendors such as Dell and Gateway are leveraging Pentiums to strengthen their presence in the corporate marketplace. Gateway not only prices its products aggressively, but it pushes the latest technology innovations. "Gateway gets the latest Intel boards, puts them in the box and gets them out the door," Sargent says. He says Gateway still has work to do to improve its service and support record.

Dell, on the other hand, scores well in service and support, he adds.

The key differentiator for vendors in the Pentium market, regardless of channel, is service and support. "That's what pushes Compaq and HP to the top of the corporate buy list," Ferlazzo says. ■

Haber is a freelance writer in Boston.

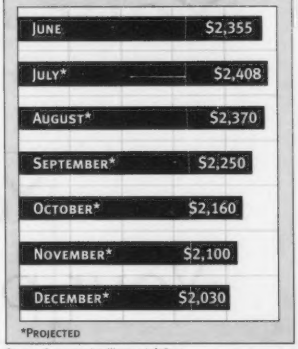
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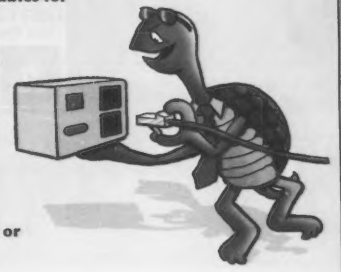
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**RFP 2756** due Thursday, November 2, 1995, at 3:30 P.M. for the establishment of a general bid list from which public schools may choose a DOS/Windows-based Public School Management System for local operations and district and state reporting for the Mississippi Department of Education. $25 Charge. A mandatory Pre-bid conference will be held Wednesday, October 11, 1995 at 10:00 a.m., at the Sillers Building, Room 502A, 550 High Street, Jackson, MS.

Vendors may request RFPs with no charge by calling the Procurement Assistant at (601) 359-2604. RFPs with a charge require a written request with proper payment, made payable to ITS. ITS will accept a Postal Money Order, Certified Check, or Corporate check drawn on a Mississippi bank. Information Technology Services (ITS) reserves the right to reject any/all bids and to waive informalities.

◆ LEGAL NOTICE

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

UNITED STATES OF AMERICA,
Plaintiff,

-vs-

INTERNATIONAL BUSINESS MACHINES CORPORATION,
Defendant.

Civil Action No. 72-344 (AGS)

TAKE NOTICE that International Business Machines Corporation ("IBM"), defendant in this antitrust action, has filed a motion for an order terminating the final judgment entered by the United States District Court for the Southern District of New York on January 25, 1956 ( the "Final Judgment"). The United States of America, plaintiff, has tentatively consented to IBM's motion in certain respects, but has reserved the right to withdraw its consent for at least 90 days after publication of this Notice. The Complaint, Final Judgment and proposed termination are further described below.

This Notice relates solely to those aspects of the Final Judgment to which the United States has tentatively consented to termination. A further notice will be published before any action on IBM's termination motion as it applies to the remainder of the Final Judgment. Prior to entry of an order terminating any aspect of the Final Judgment, the Court and the parties will consider public comments. Any such comments on the proposed terminations described in this Notice must be filed within 60 days.

The Final Judgment was entered by consent between IBM and the United States, settling an action filed on January 21, 1952. The Complaint in that action alleged that IBM had monopolized, attempted to monopolize and restrained trade in the tabulating industry, in violation of Sections 1 and 2 of the Sherman Act. Among other things, the Complaint alleged that IBM had restrained the development and growth of: other manufacturers of tabulating machines, attachments for tabulating machines and tabulating cards; businesses involved in the purchase and sale of used tabulating machinery; independent service bureaus; maintenance and repair businesses and parts businesses. The Complaint alleged that IBM only leased, and refused to sell, tabulating machines. Through its lease agreements, IBM allegedly: charged lessees a single price for machine rental, instruction and repair and maintenance; limited machine uses; restricted attachments to, alterations in, or experimentation with such machines; and required grant backs of any inventions resulting from a breach of the prohibition on experimentation. The Complaint alleged that IBM operated its service bureaus to preempt demand for the products of other manufacturers and restrained the growth of independent service bureaus by discriminating in favor of its own service bureau.

The Final Judgment applies to IBM's conduct with respect to tabulating machines and cards, both of which IBM has not manufactured for many years, and "electronic data processing machines." Certain provisions of the Final Judgment have expired or no longer apply to IBM's business. However, other provisions of the Final Judgment continue to apply to IBM's electronic data processing machine business.

The United States has tentatively agreed to terminate certain sections of the Final Judgment in their entirety: (a) Sections V(b) and (c), which require IBM to offer to sell at no more than specified prices and for a specified period used IBM machines that IBM acquires pursuant to trade-ins or as a credit against sums then or thereafter payable to IBM; and (b) Section VIII, which specifies conditions under which IBM may engage in "service bureau business", as defined by Section II(k) of the Final Judgment. Section VIII requires IBM to conduct its service bureau business through a subsidiary that is required to charge prices for services it renders based upon rates that fairly reflect all expenses properly chargeable to the subsidiary, except that the service bureau subsidiary may reduce any price to meet a competitor's price. Section VIII also prohibits IBM from providing machines to its service bureau subsidiary except on the same terms and conditions that are available to other service bureaus.

The United States also has tentatively agreed to terminate all other provisions of the Final Judgment except as they apply to the System/360...390 and AS/400 families of products and services (insofar as such services are affected by Sections VI, VII, IX and XV of the Final Judgment). These other provisions of the Final Judgment, among other things: (a) to fulfill the purpose of the Final Judgment in assuring to users and prospective users of IBM machines an opportunity to purchase those machines on terms and conditions that are not substantially more advantageous to IBM than the terms and conditions for leases of the same machines, require IBM to sell its machines at prices that have a commercially reasonable relationship to the lease charges for the same machines; (b) restrict IBM's ability to reacquire previously sold IBM machines; (c) require IBM to offer to machine owners at reasonable and nondiscriminatory prices repair and maintenance service for as long as IBM provides such service, provided that the machine has not been altered or connected to another machine in such a manner that its maintenance and repair is impractical for IBM; (d) require IBM to offer to machine owners and to persons engaged in the business of providing repair and maintenance services, at reasonable and nondiscriminatory prices, repair and replacement parts for as long as IBM has such parts available for use in its leased machines; (e) restrain IBM from requiring that lessees or purchasers of IBM machines disclose to IBM the uses of such machines, from requiring that purchasers of IBM machines have those machines maintained by IBM and generally from prohibiting experimentation with, alterations in or attachments to IBM machines; (f) require IBM to furnish to owners of IBM machines certain manuals, books of instructions and other documents relating to IBM machines that IBM furnishes to its own repair and maintenance employees; and (g) require IBM to furnish to purchasers and lessees of IBM machines certain manuals, books of instruction and other documents that pertain to the operation and application of such machines.

IBM and the United States have each filed with the Court memoranda setting forth their respective positions. Copies of the Complaint, the Final Judgment, the Stipulation containing the Government's tentative consent, the memoranda and all other papers filed in connection with this motion are available for inspection at the Office of the Clerk of the Unites States District Court, Southern District of New York, United States Courthouse, 500 Pearl Street, New York, New York 10007 and at Suite 215, Antitrust Division, Department of Justice, 325 7th Street, N.W., Washington, DC 20530 (Telephone 202-514-2481). Copies of these materials may be obtained from the Antitrust Division upon request and payment of the copying fee set by the Department of Justice.

Interested persons may submit comments regarding this matter within the sixty (60) day period established by Court order. Such comments must be filed with the Office of the Clerk of the United States District Court, Southern District of New York, 500 Pearl Street, New York, New York 10007 with copies mailed at the time of filing to: (a) counsel for IBM, Peter T. Barbur, Esq., Cravath, Swaine & Moore, Worldwide Plaza, 825 Eighth Avenue, New York, N.Y. 10019; and (b) counsel for the United States, Kent Brown, Attorney, Computers & Finance Section, Antitrust Division, United States Department of Justice, Judiciary Center Building, Suite 9901, 555 4th Street, N.W., Washington, D.C. 20001 (Telephone 202-307-6200).

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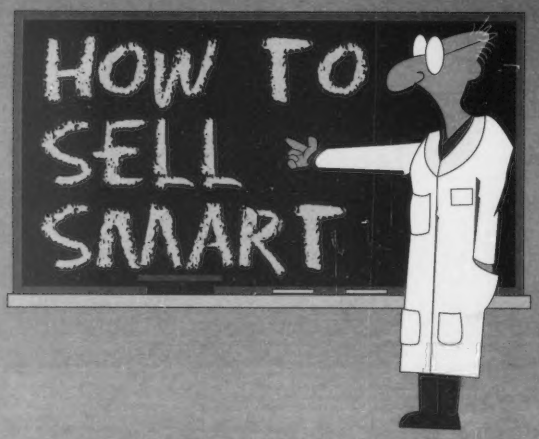
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## Gainers

### Percent

| | |
|---|---|
| Progress Software Corp. | 18.6 |
| Network Computing Devices | 17.0 |
| Systemsoft Corp. | 16.3 |
| Digital Equipment Corp. | 15.9 |
| Network Equipment Tech. | 15.7 |
| Computer Network Tech. (L) | 14.9 |
| Recognition International | 13.8 |
| Sun Microsystems Inc. | 12.7 |

### Dollar

| | |
|---|---|
| Progress Software Corp. | 10.50 |
| Sun Microsystems Inc. | 7.25 |
| Digital Equipment Corp. | 6.25 |
| Network Equipment Tech. | 5.63 |
| Cambridge Tech. Partners (H) | 5.50 |
| Xerox Corp. | 5.38 |
| Stratacom Inc. | 4.19 |
| Lattice Semiconductor | 4.00 |

## Losers

### Percent

| | |
|---|---|
| Egghead Discount Software (L) | -22.4 |
| Emulex Corp. | -19.1 |
| Micron International Inc. (H) | -17.7 |
| Bachman Info. Systems | -15.0 |
| Picturetel Corp. | -14.4 |
| Data Race Inc. | -11.9 |
| Western Digital Corp. | -11.7 |
| Iomega Corp. | -11.5 |

### Dollar

| | |
|---|---|
| Picturetel Corp. | -7.75 |
| Micron International Inc. (H) | -5.00 |
| Micron Technology | -4.88 |
| Ascend Communications (H) | -4.50 |
| McAfee Associates (H) | -4.13 |
| Komag Inc. | -4.13 |
| Autodesk Inc. | -3.88 |
| Softkey International Inc. | -3.75 |

# Recipe for success

Autumn has rolled around again, and the food pages of the newspapers are filled with recipes for apple crisp, cake and pie. Falling right in line, the business pages have also had several apple recipes, but these are designed to spice up **Apple Computer, Inc. (AAPL)** in Cupertino, Calif.

Apple has been in the news recently for several reasons, one being its shortfall in meeting the demand for Macintosh computers. This has resulted in a recommended Hold position by several stock analysts, including John Girton at Van Kasper & Co. in San Francisco.

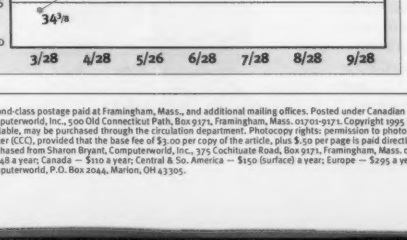
However, the strong demand is a good sign for Apple, said Richard Chu, an analyst at Cowen & Co. in Boston. "Apple approached this year very conservatively," Chu said. "They have had a frustrating recent quarter because they were a bit constrained by Power PC [chip] availability from **IBM (IBM)** and **Motorola, Inc. (MOT)**, but that will shortly become a nonissue. Apple should show significant progress in meeting demand in the December quarter."

Apple has also been in the headlines for its response to **Microsoft Corp.'s (MSFT)** Windows 95 blitz and for claims that IBM was considering adopting Apple's operating system as its desktop standard (see story, cover 1). Girton said he is encouraged to see Apple fighting back, and added that it is "a positive step for them to be promoting their operating system." He also said he looks favorably on "Apple's niche strategy of promoting their strengths" in the prepress, graphics and multimedia markets.

Apple has a recipe for longer term prospects as well. This includes participation in the Common Hardware Reference Platform with IBM and Motorola and the forthcoming release of the Copland operating system. But "many people are having serious doubts about the 1996 release date" of Copland, Chu said. It is more likely that it will be ready for the table sometime in 1997, he said. —*Stewart Deck*

### Slim pickings

Apple's stock ripened over the summer, but it has started to fall from the tree due to the company's lower-than-expected earnings




| Exch | 52-Week Range | | | Sep. 29 Wk Net | Wk Pct |
|---|---|---|---|---|---|
| | | | | 3 PM | Change Change |
| **Communications and Network Services** | | | | | **UP 0.66%** |
| COMS | 49.00 | 17.00 | 3Com Corp. | 46.25 | -1.63 -3.4 |
| AIT | 52.75 | 38.00 | AmeriTech Corp. | 51.50 | -0.38 -0.7 |
| T | 66.00 | 47.25 | AT&T (H) | 65.50 | 2.25 3.6 |
| ASND | 86.25 | 10.88 | Ascend Communications (H) | 78.25 | -4.50 -5.4 |
| BNYN | 19.75 | 9.75 | Banyan Systems Inc. (L) | 10.00 | -0.50 -4.8 |
| BNET | 57.13 | 23.13 | Bay Networks Inc. | 54.00 | 0.13 0.2 |
| BEL | 61.88 | 48.38 | Bell Atlantic Corp. | 61.38 | 0.50 0.8 |
| BLS | 76.75 | 50.50 | Bellsouth Corp. (H) | 73.38 | 1.75 2.4 |
| BBN | 39.38 | 12.63 | Bolt, Beranek & Newman | 36.88 | 1.13 3.1 |
| BRKT | 22.25 | 9.00 | Brooktrout Technology | 20.25 | 0.75 3.8 |
| CS | 69.25 | 37.38 | Cabletron Systems (H) | 66.75 | -0.25 -0.4 |
| CGRM | 22.25 | 12.25 | Centigram Communications | 17.75 | 0.63 3.6 |
| CHPM | 51.13 | 20.00 | Chipcom Corp. | 48.88 | -1.00 -2.0 |
| CSCO | 73.88 | 23.63 | Cisco Systems Inc. | 69.50 | -1.00 -1.4 |
| CLIX | 11.38 | 6.13 | Compression Labs Inc. | 7.75 | 0.00 0.0 |
| CMNT | 12.75 | 4.75 | Computer Network Tech. (L) | 6.75 | 0.88 14.9 |
| XCOM | 14.50 | 7.50 | CrossComm | 12.88 | -1.00 -7.2 |
| DASW | 4.50 | 2.13 | Data Switch Corp. | 4.00 | -0.13 -3.0 |
| DIGI | 64.00 | 26.88 | DSC Communications (H) | 60.00 | -2.25 -3.6 |
| FORE | 42.00 | 19.63 | FORE Systems Inc. | 36.50 | 0.50 1.4 |
| GDC | 35.88 | 9.25 | General Datacomm Inds. | 14.75 | 1.50 11.3 |
| GTE | 39.25 | 29.50 | GTE Corp. | 39.25 | 1.25 3.3 |
| ITT | 128.50 | 77.00 | ITT Corp. | 124.75 | -0.88 -0.7 |
| MCIC | 27.13 | 17.25 | MCI Communications Corp. (H) | 26.13 | -0.25 -0.9 |
| MICM | 15.50 | 5.50 | MICOM Communications Corp. | 10.75 | -0.13 -1.1 |
| MNPI | 22.25 | 6.63 | Microcom Inc. | 17.88 | -0.75 -4.0 |
| NTRX | 10.50 | 4.38 | Netrix Corp. | 4.88 | -0.50 -9.3 |
| NCDI | 12.00 | 3.25 | Network Computing Devices | 6.88 | 1.00 17.0 |
| NWK | 41.38 | 12.50 | Network Equipment Tech. | 41.38 | 5.63 15.7 |
| NETG | 44.75 | 17.13 | Network General | 41.00 | -0.13 -0.3 |
| NN | 43.38 | 27.00 | Newbridge Networks Corp. | 29.38 | 0.13 0.4 |
| NT | 41.00 | 31.25 | Northern Telecom Ltd. | 35.63 | 0.25 0.7 |
| NOVL | 23.25 | 14.13 | Novell Inc. | 18.50 | -0.31 -1.7 |
| NYN | 48.75 | 35.88 | Nynex Corp. | 47.50 | -0.13 -0.3 |
| OCTL | 42.63 | 17.75 | Octel Communications Corp. | 35.63 | -3.38 -8.7 |
| ODSI | 43.25 | 8.50 | Optical Data Systems Inc. | 39.50 | 0.00 0.0 |
| PNRL | 8.38 | 2.13 | Penril Data Comm Networks | 7.69 | 0.56 7.9 |
| PCTL | 62.00 | 15.50 | Picturetel Corp. | 46.13 | -7.75 -14.4 |
| PTON | 10.75 | 4.75 | Proteon Inc. | 9.44 | 0.69 7.9 |
| RACO | 7.88 | 3.00 | Racotek Inc. | 6.38 | -0.50 -7.3 |
| RETX | 6.13 | 3.50 | Retix | 4.75 | 0.06 1.3 |
| SFA | 24.88 | 16.50 | Scientific Atlanta Inc. (L) | 16.88 | -0.50 -2.9 |
| SBC | 54.88 | 39.25 | Southwestern Bell Corp. (H) | 54.50 | 0.38 0.7 |
| FON | 39.63 | 25.88 | Sprint Corp. | 35.25 | -0.50 -1.4 |
| SMSC | 31.63 | 12.50 | Standard Microsystems Corp. | 17.25 | 1.19 7.4 |
| STRM | 57.50 | 17.38 | Stratacom Inc. | 55.06 | 4.19 8.2 |
| TBIT | 8.13 | 3.63 | Telebit Corp. | 4.38 | 0.25 6.1 |
| USRX | 91.50 | 15.38 | US Robotics (H) | 87.00 | -2.00 -2.2 |
| USW | 48.38 | 29.63 | US West Inc. (H) | 47.25 | 0.50 1.1 |
| XIRC | 23.50 | 9.13 | Xircom | 13.75 | -0.38 -2.7 |
| XLGX | 58.75 | 11.00 | Xylogics Inc. | 55.25 | 0.25 0.5 |
| **PCs and Workstations** | | | | | **OFF 0.73%** |
| AALR | 9.63 | 3.63 | Advanced Logic Research | 7.75 | -0.75 -8.8 |
| AAPL | 50.13 | 32.50 | Apple Computer Inc. | 37.50 | 0.50 1.4 |
| ASTA | 19.13 | 9.88 | AST Research Inc. (L) | 10.38 | 0.25 2.5 |
| CPQ | 54.75 | 30.75 | Compaq Computer Corp. | 48.75 | 1.63 3.4 |
| DELL | 93.88 | 35.38 | Dell Computer Corp. | 86.44 | -2.81 -3.2 |
| GATE | 32.75 | 16.00 | Gateway 2000 Inc. | 30.00 | 0.56 1.9 |
| HWP | 85.88 | 41.75 | Hewlett Packard Co. | 83.88 | 1.25 1.5 |
| MUEI | 29.88 | 3.06 | Micron International Inc. (H) | 23.25 | -5.00 -17.7 |
| SGI | 45.63 | 24.13 | Silicon Graphics | 34.75 | 0.25 0.7 |
| SUNW | 64.38 | 27.13 | Sun Microsystems Inc. | 64.38 | 7.25 12.7 |
| TAN | 64.38 | 41.00 | Tandy Corp. | 61.00 | -1.38 -2.2 |
| **Large Systems** | | | | | **OFF 1.17%** |
| AMH | 13.63 | 8.00 | Amdahl Corp. | 9.63 | -0.38 -3.8 |
| CNX | 8.88 | 3.63 | Convex Computer | 4.50 | -0.13 -2.7 |
| CYR | 74.38 | 14.63 | Cray Research Inc. | 22.13 | -1.38 -5.9 |
| DGN | 12.00 | 6.75 | Data General Corp. | 10.38 | 0.25 2.5 |
| DEC | 49.50 | 24.88 | Digital Equipment Corp. | 45.50 | 6.25 15.9 |
| ENCC | 5.56 | 1.06 | Encore Computer Corp. | 2.13 | -0.06 -2.9 |
| NHWK | 18.50 | 9.25 | Harris Computer Systems Corp. | 16.50 | 0.00 0.0 |
| IBM | 114.63 | 67.38 | IBM | 94.50 | 0.63 0.7 |
| MDCD | 10.50 | 3.00 | Meridian Data Inc. | 9.88 | 0.81 9.0 |
| NETF | 12.25 | 4.25 | NetFrame | 6.75 | 0.00 0.0 |
| SQNT | 25.38 | 14.13 | Sequent Computer Sys. | 19.94 | -2.44 -10.9 |
| SEQS | 10.00 | 3.13 | Sequoia Systems Inc. | 7.50 | -0.25 -3.2 |
| SRA | 39.88 | 23.00 | Stratus Computer Inc. | 26.50 | -1.13 -4.1 |
| TDM | 19.75 | 11.75 | Tandem Computers Inc. | 12.25 | -0.25 -2.0 |
| TRCD | 7.63 | 3.38 | TriCord Systems | 4.63 | -0.50 -9.8 |
| UIS | 13.63 | 7.63 | Unisys Corp. (L) | 7.63 | -0.13 -1.6 |
| **Software** | | | | | **OFF 1.99%** |
| ADBE | 66.50 | 27.25 | Adobe Systems Inc. | 52.25 | -0.75 -1.4 |
| AMSWA | 8.63 | 2.50 | American Software Inc. | 7.50 | -0.38 -4.8 |
| APLX | 33.00 | 9.75 | Applix Inc. | 22.50 | -2.50 -10.0 |
| ACAD | 53.00 | 30.50 | Autodesk Inc. | 44.13 | -3.88 -8.1 |
| BACH | 7.88 | 2.00 | Bachman Info. Systems | 6.38 | -1.13 -15.0 |
| BGSS | 36.50 | 22.00 | BGS Systems Inc. | 36.00 | 0.75 2.1 |
| BMCS | 51.50 | 20.50 | BMC Software Inc. (H) | 48.25 | -1.50 -3.0 |
| BOOL | 31.25 | 19.75 | Boole & Babbage | 30.00 | 0.25 0.8 |
| BORL | 17.25 | 6.00 | Borland Int'l Inc. | 14.63 | -1.13 -7.1 |
| BROC | 11.75 | 5.75 | Brock Control Systems Inc. | 8.00 | 0.13 1.6 |
| CESH | 3.75 | 1.53 | CE Software (L) | 1.88 | -0.13 -6.3 |
| CYE | 30.75 | 8.75 | Cheyenne Software Inc. | 19.75 | 0.13 0.6 |
| COGNF | 35.38 | 12.00 | Cognos Inc. | 34.63 | 1.88 5.7 |
| CA | 51.75 | 28.38 | Computer Associates | 42.00 | 0.13 0.3 |
| CVN | 14.38 | 2.63 | Computervision Corp. | 12.13 | -0.38 -3.0 |
| CPWR | 49.25 | 21.50 | Compuware Corp. | 22.00 | -0.50 -2.2 |
| CSRE | 32.38 | 10.75 | Comshare Inc. | 29.75 | 1.00 3.5 |
| COSFF | 19.50 | 10.13 | Corel Corp. | 16.38 | -0.13 -0.8 |
| DWTI | 16.25 | 9.00 | Dataware Technologies Inc. | 12.25 | -1.44 -10.5 |
| FILE | 51.00 | 21.50 | Filenet Corp. | 44.13 | -0.88 -1.9 |
| DDDDF | 8.38 | 3.38 | 4th Dimension | 5.88 | -0.38 -6.0 |
| FRAM | 33.00 | 13.75 | Frame Technology | 26.75 | -0.38 -1.4 |
| FTPS | 35.50 | 20.25 | FTP Software Inc. | 27.88 | 8.63 2.3 |
| GSOF | 26.00 | 8.00 | Group I Software | 11.00 | 0.00 0.0 |
| GPTA | 13.88 | 8.25 | Gupta | 8.88 | -0.38 -4.1 |
| HOGN | 12.00 | 4.63 | Hogan Systems Inc. | 9.75 | -0.13 -1.3 |
| HYSW | 56.25 | 31.25 | Hyperion Software Corp. (H) | 55.25 | 1.63 3.0 |
| IRIC | 18.63 | 11.25 | Information Resources | 13.25 | -0.75 -5.4 |
| IFMX | 8.38 | 11.63 | Informix Corp. | 32.50 | -0.38 -1.1 |
| INGR | 14.38 | 7.38 | Intergraph Corp. | 12.06 | -0.06 -0.5 |
| LEAF | 11.00 | 2.88 | Interleaf Inc. | 10.19 | -0.25 -2.4 |
| ISLI | 26.25 | 12.25 | Intersolv Inc. | 20.63 | 0.50 2.5 |
| INTU | 51.75 | 20.00 | Intuit Inc. (H) | 47.38 | -3.38 -6.7 |
| LGNT | 48.25 | 23.00 | Legent Corp. | 47.50 | 0.38 0.8 |
| MGICF | 11.50 | 3.63 | Magic Software Enterprises | 7.38 | -0.38 -4.8 |
| MANU | 16.75 | 6.75 | Manugistics Group Inc. | 15.50 | -0.50 -3.1 |
| MAPS | 40.00 | 16.50 | MapInfo Corp. | 20.63 | -1.38 -6.3 |
| MATH | 7.38 | 2.00 | MathSoft | 6.00 | 0.00 0.0 |
| MCAF | 56.50 | 8.00 | McAfee Associates (H) | 50.88 | -4.13 -7.5 |
| MENT | 21.38 | 10.13 | Mentor Graphics | 20.50 | 0.00 0.0 |
| MIFGY | 15.00 | 10.75 | Micro Focus | 11.25 | -0.25 -2.2 |
| MGXI | 13.88 | 5.00 | Micrografx Inc. | 11.88 | -0.25 -2.1 |
| MSFT | 109.25 | 53.88 | Microsoft Corp. | 91.63 | 1.75 1.9 |
| NETM | 27.25 | 9.50 | NetManage Inc. | 23.75 | -2.00 -7.8 |
| NSCP | 74.75 | 45.75 | Netscape Comm. Corp. | 62.75 | -0.50 -0.8 |
| ORCL | 47.00 | 24.75 | Oracle Corp. | 38.75 | -0.50 -1.3 |
| PMTC | 63.75 | 27.75 | Parametric Technology | 62.25 | 1.13 1.8 |
| PARQ | 23.25 | 7.88 | ParcPlace Systems Inc. | 10.50 | -0.81 -7.2 |
| PSFT | 88.75 | 22.50 | Peoplesoft (H) | 88.75 | 3.50 4.1 |
| PTEC | 14.38 | 5.38 | Phoenix Technologies | 13.00 | -0.63 -4.6 |
| PSQL | 16.88 | 6.50 | Platinum Software | 11.50 | -0.13 -1.1 |
| PLAT | 26.00 | 13.50 | Platinum Technology | 20.25 | -2.25 -10.0 |
| PRGS | 67.25 | 29.50 | Progress Software Corp. | 67.00 | 10.50 18.6 |
| QDEK | 22.13 | 1.94 | Quarterdeck Corp. | 19.25 | 0.13 0.7 |
| RNBO | 26.75 | 11.13 | Rainbow Technologies Inc. | 19.63 | 1.00 5.4 |
| ROPS | 10.13 | 2.00 | Rasterops | 8.25 | 0.06 0.8 |
| ROSS | 7.75 | 3.00 | Ross Systems | 7.13 | -0.25 -3.4 |
| SKEY | 51.75 | 13.00 | Softkey International Inc. | 45.13 | -3.75 -7.7 |
| SPCO | 6.25 | 2.88 | Software Publishing Corp. | 4.31 | -0.31 -6.8 |
| SOTA | 12.50 | 5.63 | State of the Art | 10.63 | -0.75 -6.6 |
| SSW | 47.88 | 28.63 | Sterling Software Inc. | 45.50 | -1.00 -2.2 |
| SDRC | 20.25 | 4.63 | Struct. Dynamics Research | 18.50 | 0.38 2.1 |
| SYBS | 55.00 | 19.88 | Sybase Inc. | 32.50 | -0.50 -1.5 |
| SYMC | 33.25 | 14.63 | Symantec Corp. | 29.38 | -1.25 -4.1 |
| SNPS | 34.50 | 19.75 | SynOpsys | 30.75 | -0.88 -2.8 |
| SSAX | 45.75 | 10.63 | System Software Assoc. (H) | 40.56 | -3.69 -8.3 |
| SYSF | 18.13 | 5.50 | Systemsoft Corp. | 15.13 | 2.13 16.3 |
| VIEW | 24.00 | 7.88 | ViewLogic Systems | 14.00 | 0.00 0.0 |
| VMRK | 21.75 | 10.75 | VMark Software Inc. | 15.13 | -0.63 -4.0 |
| WALK | 9.75 | 4.63 | Walker Interactive Systems (H) | 8.75 | -0.25 -2.8 |
| WALL | 55.50 | 15.00 | Wall Data Inc. | 17.75 | -0.50 -2.7 |
| WANG | 19.50 | 9.13 | Wang Laboratories Inc. | 15.75 | -0.63 -3.8 |
| **Communications** | | | | | **OFF 2.20%** |
| AMD | 39.25 | 22.25 | Advanced Micro Devices | 29.63 | -3.38 -10.2 |
| ADI | 39.50 | 20.00 | Analog Devices Inc. | 35.38 | -0.63 -1.7 |
| ATML | 36.75 | 14.50 | Atmel Corp. | 34.00 | -0.50 -1.4 |
| CHPS | 15.88 | 4.88 | Chips and Technologies | 14.00 | -0.25 -1.8 |
| CRUS | 61.13 | 10.50 | Cirrus Logic | 57.63 | 0.88 1.5 |
| CY | 55.50 | 15.00 | Cypress Semiconductor Corp. | 39.00 | 1.00 2.6 |
| DS | 24.88 | 13.38 | Dallas Semiconductor | 20.13 | -1.13 -5.3 |
| ISSS | 34.25 | 11.63 | Integrated Silicon Systems | 29.50 | -0.88 -2.9 |
| INTC | 78.38 | 28.75 | Intel Corp. | 61.00 | 0.38 0.6 |
| LSI | 62.50 | 17.75 | LSI Logic Corp. | 59.50 | -1.00 -1.7 |
| LSCC | 43.00 | 15.50 | Lattice Semiconductor | 40.50 | 4.00 11.0 |
| MU | 94.75 | 15.25 | Micron Technology | 81.50 | -4.88 -5.6 |
| MOT | 82.50 | 49.00 | Motorola Inc. | 77.38 | -1.13 -1.4 |
| NSM | 33.63 | 14.38 | National Semiconductor | 27.88 | -0.88 -3.0 |
| SERA | 57.50 | 13.38 | Sierra Semiconductor | 48.38 | -3.63 -7.0 |
| TXN | 83.50 | 12.75 | Texas Instruments | 81.50 | 1.50 1.9 |
| VLSI | 39.13 | 10.25 | VLSI Technology | 34.00 | -1.00 -2.9 |
| WWTK | 6.88 | 1.78 | Weitek | 5.00 | -0.13 -2.4 |
| WDC | 22.13 | 13.13 | Western Digital Corp. | 16.00 | -2.13 -11.7 |
| XLNX | 55.50 | 15.00 | Xilinx | 49.13 | -0.06 -0.1 |
| ZLG | 54.13 | 37.38 | Zilog Inc. | 41.38 | -2.00 -4.6 |
| **Peripherals and Subsystems** | | | | | **OFF 3.75%** |
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| ADPT | 47.25 | 17.25 | Adaptec Inc. | 42.88 | 1.00 2.4 |
| BTEC | 27.25 | 14.75 | Banctec Inc. | 21.00 | 1.00 5.0 |
| CBEX | 13.13 | 3.38 | Cambex Corp. | 11.75 | -0.25 -2.1 |
| CGN | 6.38 | 1.38 | Cognitronics Corp. | 4.81 | -0.38 -7.2 |
| CNR | 19.25 | 9.00 | Conner Peripherals | 16.75 | -1.00 -5.6 |
| CREAF | 18.31 | 5.88 | Creative Technologies Inc. | 13.50 | -0.25 -1.8 |
| RACE | 13.13 | 3.50 | Data Race Inc. | 4.63 | -0.63 -11.9 |
| DTM | 9.38 | 4.25 | Dataram Corp. | 7.88 | -0.63 -7.4 |
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| EMLX | 28.50 | 8.50 | Emulex Corp. | 13.75 | -3.25 -19.1 |
| ESCC | 20.00 | 11.25 | Evans & Sutherland | 18.13 | -0.63 -3.3 |
| EXBT | 24.00 | 10.00 | Exabyte (L) | 13.25 | 0.00 0.0 |
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| IOMG | 30.00 | 2.88 | Iomega Corp. | 23.00 | -3.00 -11.5 |
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| PNCL | 23.75 | 8.75 | Pinnacle Micro Inc. | 19.38 | -1.63 -7.7 |
| PTNX | 38.75 | 11.13 | Printronix Inc. | 29.75 | -0.25 -0.8 |
| AQM | 10.50 | 4.00 | QMS Inc. | 4.50 | -0.25 -5.3 |
| QNTM | 28.50 | 13.75 | Quantum Corp. | 21.88 | -1.13 -4.9 |
| RDUS | 15.00 | 6.75 | Radius Inc. | 6.88 | -0.50 -6.8 |
| REC | 12.38 | 6.50 | Recognition International | 12.38 | 1.50 13.8 |
| REXN | 7.00 | 0.31 | Rexon Inc. | 0.56 | 0.00 0.0 |
| SEG | 49.38 | 22.88 | Seagate Technology | 42.38 | -1.63 -3.7 |
| STK | 33.25 | 17.88 | Storage Technology | 24.75 | -0.88 -3.4 |
| TEK | 58.63 | 31.38 | Tektronix Inc. (H) | 58.63 | 3.25 5.9 |
| XRX | 134.50 | 90.63 | Xerox Corp. | 134.50 | 5.38 4.2 |
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| AMSY | 28.00 | 14.38 | American Mgmt. Systems | 26.50 | 0.50 1.9 |
| AAC | 3.13 | 0.56 | Anacomp Inc. | 0.63 | 0.00 0.0 |
| ANLY | 33.00 | 15.75 | Analysts Int'l. (H) | 32.00 | 2.00 6.7 |
| AUD | 70.88 | 36.75 | Auto Data Processing | 68.75 | -1.00 -1.4 |
| CATP | 50.50 | 14.00 | Cambridge Tech. Partners (H) | 50.50 | 5.50 12.2 |
| CEN | 46.88 | 23.50 | Ceridian Corp. | 43.88 | -0.13 -0.3 |
| CDO | 32.50 | 19.38 | Comdisco Inc. | 29.88 | 0.38 1.3 |
| CHRZ | 23.75 | 7.63 | Computer Horizons | 20.25 | 0.88 4.5 |
| CSC | 64.63 | 41.00 | Computer Sciences | 64.63 | 3.63 5.9 |
| TSK | 16.13 | 7.50 | Computer Task Group | 14.88 | -0.38 -2.5 |
| CPU | 44.38 | 9.50 | CompuUSA Inc. (H) | 42.63 | -0.88 -2.0 |
| CDAT | 12.13 | 5.38 | Control Data Systems Inc. (H) | 11.69 | 0.94 8.7 |
| EGGS | 14.25 | 6.63 | Egghead Discount Software (L) | 8.25 | -2.38 -22.4 |
| GME | 47.50 | 34.75 | General Motors E (EDS) | 46.25 | 0.75 1.6 |
| INAC | 15.25 | 6.88 | Inacom Corp. | 13.50 | -1.13 -7.7 |
| INEL | 17.50 | 7.50 | Intelligent Electronics | 8.50 | -0.63 -6.8 |
| MSEL | 10.75 | 3.88 | Merisel | 6.13 | -0.75 -10.9 |
| MICA | 15.00 | 8.50 | Micro Age Inc. | 11.25 | 0.00 0.0 |
| PAYX | 46.25 | 23.25 | Paychex | 46.25 | 2.25 5.1 |
| PMS | 54.25 | 37.25 | Policy Management Sys. | 51.13 | -1.38 -2.6 |
| REY | 36.63 | 22.25 | Reynolds and Reynolds | 34.13 | -1.13 -3.2 |
| SEIC | 24.50 | 16.75 | SEI Corp. | 20.50 | -0.50 -2.4 |
| SMED | 42.75 | 25.38 | Shared Medical Systems | 40.50 | -0.50 -1.2 |
| SHKIF | 13.00 | 4.00 | SHL Systemhouse | 12.50 | -0.13 -1.0 |
| SSPE | 26.50 | 12.00 | Software Spectrum Inc. | 24.63 | -0.63 -2.5 |

KEY: (H) = New annual high reached in period (L) = New annual low reached in period

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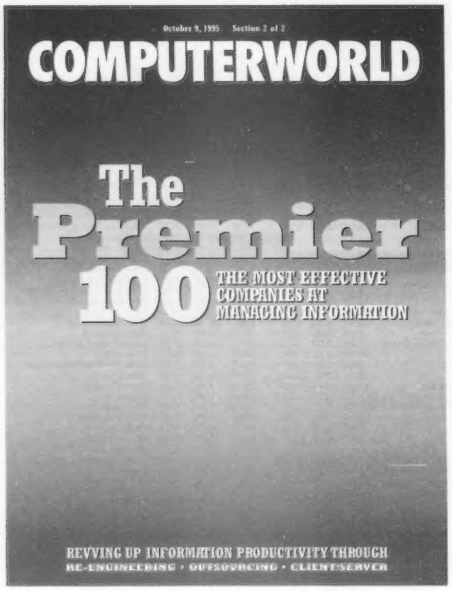
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# Object standoff

CONTINUED FROM COVER 1

software bridges between OLE and the OMG's Common Object Request Broker Architecture.

Most of the larger systems vendors, including IBM, Hewlett-Packard Co., Sun Microsystems, Inc. and Digital Equipment Corp., already sell object systems that conform to CORBA specifications. And the ability to link desktop systems that use OLE with mainframes and servers that use CORBA-based object systems is crucial, users agreed.

"The enterprise backbone will be CORBA or something like CORBA," said one technology manager at a manufacturing firm. "And we'll end up using OLE on the desktop. But Microsoft will be limited to the workgroup for a while. That's why we need the interoperability."

Instead of using CORBA on Windows and Windows NT, Microsoft is working with other vendors to implement OLE on major platforms such as Digital's OpenVMS and Unix systems. Last year, Microsoft licensed its Windows source code to Bristol Technology, Inc. in Ridgefield, Conn., and Mainsoft Corp. in Sunnyvale, Calif. (see story at right).

### Network OLE on its way

Later this month, Microsoft will publish its specifications for Network OLE, the forthcoming version of OLE that will operate across networks to connect components on different machines, Alger said. Other OMG members will be able to use those specs to propose ways for Network OLE to link with CORBA, he added.

For its part, Digital said its CORBA-compliant Object Broker system will eventually allow developers to write applications that use OLE directly. Object Broker is available or planned for many competitors' Unix systems and IBM's MVS mainframe operating system, which is another way OLE will spread to all major platforms, said Steve Baron, engineering manager for Object Broker at Digital.

But there has been increasing friction between Microsoft and the OMG as their paths have begun to diverge. Insiders at the OMG said Microsoft and Digital have lost many of the battles at OMG meetings, and Microsoft hasn't attended an OMG meeting since June.

Microsoft also pulled out of the OMG-sponsored Object World trade show in San Francisco in August. A spokeswoman for Microsoft attributed the change to "a case of bad planning" that left the software giant unable to staff its booth at the show.

Microsoft also decided at the eleventh hour to withdraw from a joint proposal with Digital that would have linked CORBA with the current version of OLE. The decision left Digital with a proposal that still included Microsoft's name on some pages — a blooper that both companies said was simply a typographical error.

That only fuels speculation about Microsoft's commitment to connections with CORBA, one analyst said.

"They're not leaving the OMG because they can't take the risk of saying, 'We're antistandards,'" said Judith Hurwitz, president of Hurwitz Consulting Group, Inc. in Newton, Mass. "They're trying to stall the market until they can get their act together."

Not all users are convinced that Microsoft or its competitors have their acts together. Either technology could work, but neither Microsoft nor the OMG has solved problems such as security and distributed naming, said an executive at a financial trading company.

"But Microsoft has accelerated work on the distributed version of OLE. They're likely to get there faster," said the executive, who asked to remain anonymous.

**Microsoft's top programmer** reveals the company's long-term tools strategy. See page 96.

## A Windows look at Unix

Bristol Technology in Ridgefield, Conn., this week plans to announce a new version of its software for compiling Windows applications on Unix.

The release, Wind/U 3.0, includes support for Microsoft's OLE. Developers will be able to create OLE-enabled Unix applications that work the way Windows users expect. For example, it will let users open a spreadsheet from within a word processing document. Bristol plans to ship Wind/U 3.0 next month.

"I have customers who want to fire off [Microsoft] Word documents from within Unix applications," said Mo Bjornestad, vice president of marketing at Mark V Systems in Overland Park, Kan. The software vendor uses Wind/U. "They want to be able to get at all the Windows products that are going to be responsive to OLE commands. The emphasis is on 'going to' because, in fact, there's not that many today."

Wind/U 3.0 will let Mark V release a new version of its own software that supports OLE and OMG's CORBA by the end of this year, Bjornestad said.

Also due by the end of this year is a new version of MainWin 2.0 from Mainsoft in Sunnyvale, Calif.

Like Bristol, Mainsoft has licensed Windows source code from Microsoft. MainWin 2.0, announced in September, will support some OLE functionality. But it won't let users launch one OLE-enabled application from inside another until a future release, planned for sometime next year. — *Frank Hayes*

# Apple

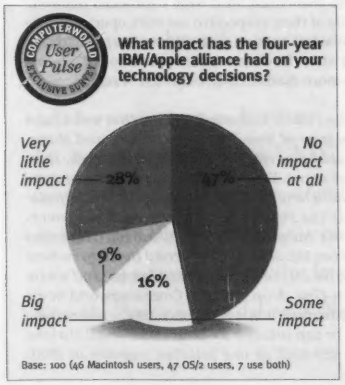
CONTINUED FROM COVER 1

"This is Apple executives making comments about their own agenda," said Joanne Sager, a spokeswoman for IBM's Austin, Texas-based Personal Software Products division, which is responsible for OS/2.

IBM said its announcement last week that its Boca Raton, Fla., OS/2 development group will relocate to Austin is a further sign of its commitment to OS/2. IBM expects that merging its OS/2 client and OS/2 server development efforts into a single location will increase product synergy and reduce time to market.

Time is of the essence in the operating systems race because OS/2 and Mac OS are struggling to blunt Microsoft's megabucks marketing blitz for Windows 95. But teamwork may not be the solution here. In an exclusive *Computerworld* survey of 100 users of OS/2 and/or Macintosh systems, 52% said if IBM and Apple joined forces, they would still face a tough battle against Microsoft.

When asked about the impact of the IBM/Apple alliance of four years ago, the majority of survey respondents declared it had "no impact at all" on their technology decisions (see chart at left).




### Advantages ahead

Some analysts said IBM could benefit from a deal with Apple.

"It would give [IBM] a compelling story to tell — more compelling than what is in their current bag of tricks," said Amy Wohl, editor of the "Trends Letter," a newsletter in Narbarth, Pa. "OS/2 is an object of limited desire. There are more than 20 million Mac users, and if IBM were behind the operating system it might give Microsoft a real run for the money."

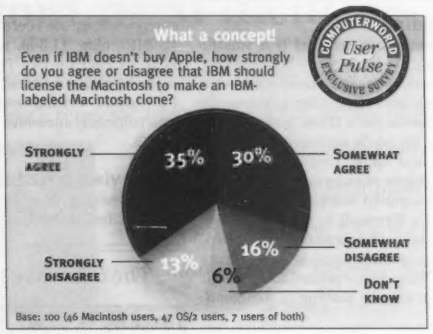
However, IBM's loyal following of OS/2 users isn't warming to the idea.

"It's a bad idea," said Bill Zak, a former president of the New York OS/2 Users Group and president of William H. Zak & Associates, a consulting firm in Fairfield, Conn. "But if IBM had marketed OS/2 properly we wouldn't be having this conversation."

Apple could lose some of its standing among its avid followers as an anti-establishment brand, but the company has a lot to gain by aligning itself more closely with IBM.

Apple is battling the Mac-like Windows 95 user interface as well as expectations that it will post a significant loss for its fourth fiscal quarter, which ended Sept. 30. And while Apple has established a stronghold in education, multimedia and publishing, it still hasn't made a significant dent in the lucrative corporate market where IBM is a major player.

"I would think that corporate Mac users would stand up and cheer," Wohl said. "At last they would have someone to hold accountable, a consistent strategy from day to day, and be dealing with a company that knows selling something means you are responsible for it."




That strikes a chord with some frustrated Macintosh users.

"If it means that the Mac will be around in five years, and that I'll start getting my machines on time, then I'm all for it," said an information systems manager at a large East Coast manufacturing facility who asked not to be identified.

Mary Abdill, president of Creative Data Movers Inc., a consulting and training firm in New York, uses Mac OS and OS/2. She claims that "the platforms are very similar" and might be a natural with Mac OS on the desktop and OS/2 on the server.

However, some industry watchers didn't see the synergy.

"I have problems understanding where there is crossover of their customer bases," said Bill Gurley, an analyst at First Boston Corp., an investment banking firm in New York. "I don't know a lot of Apple users that were considering purchasing IBM machines, or IBM users who are dying to get the Apple OS."

# Weighing the benefits of NT vs. Windows 95

*Charles Babcock*

Microsoft's Windows 95 is selling well in retail stores, contrary to scientific and anecdotal evidence that indicates a reluctance by many IS shops to immediately embrace it. Many shops should more actively consider Microsoft's Windows NT Workstation instead.

The $200 million that Microsoft spent on the Windows 95 launch was more of a kickoff for the masses ("Start me up") than for IS managers. Those managers have budgets and application compatibility to think about, not just rock 'n' roll.

The larger issue is that over time, it is going to be easier to create and manage client/server systems if the client and the server have the same operating system kernel. They will when Windows is merged into Windows NT, as Microsoft Chairman Bill Gates has stated will happen. This remains a strong argument to move to NT.

Still, there are reasons *not* to move to NT. Even in the Workstation version, NT is still more operating system than most desktops need. And there are mobile communications connections that NT doesn't make as well as Windows 95. At the same time, however, getting to NT early may save pain and money later on.



**Microsoft could end up pursuing a splintered Windows strategy, contrary to present intentions.**

Migrating to NT in anticipation of a merger has its own risks. It isn't clear how one Microsoft operating system is going to serve vastly different markets. The home user's needs are moving in a different direction from the office worker's, even though some of the same work will be done at both locations.

The home user has more need for application responsiveness (read games), a CD-ROM drive, cheap storage for downloading files off the Internet and plug-and-play capabilities. At the same time, the home user has less need for varied networking options, systems management and security.

If NT remains a bit bulky for today's office desktop, its C2 security and other features are overkill for the home computer. With the home market growing faster than the workplace, it's debatable whether Microsoft knows exactly what the operating system for the consumer will look like in the year 2000. It only knows that it wants to sell it.

The PC market is generating more distinct segments, which markets tend to do as they mature. As a result, Microsoft may end up pursuing a splintered Windows strategy, contrary to present intentions. It would then offer Windows NT for the enterprise and some version of Windows 3.11 or Windows 95 (Windows 97? 2000?) for the home user.

Now consider some of the hidden risks of moving to Windows 95 in mid-1996, as surveys indicate many IS shops plan to do. Will such a move bring with it instant obsolescence? If the consumer market needs an upgrade every two years, won't Windows 95 be due for one by mid-1997? How smart would you look upgrading to Windows 95 in 1996 when you may have to go back to management, hat in hand, in 1997? Isn't it foolish to number operating system versions by year? It hands those skeptics in finance such a convenient reason for asking questions.

Even if your IS staff wants to move to Windows 95 immediately, any IS manager would be advised to evaluate and test all the applications that have been customized in-house. Some developers have put hooks in the operating system so they work fine with 16-bit Windows 3.11 but won't work in the Virtual DOS Machine under which they will run in Windows 95. Straightening out these problems will take several months — one of the reasons IS is being cautious about Windows 95.

IS is underestimating the pressures on Microsoft to do two things at once — satisfy the home user and build an enterprise operating system. Other Microsoft products, such as OLE, Visual Basic and SQL Server, have taken on lives of their own and led Microsoft in directions other than those originally intended.

IS should consider the question of where it will go from here and take another hard look at NT Workstation. Its drawbacks may be no worse than those tied to Windows 95.

Babcock is *Computerworld*'s technical editor. His Internet address is charles_babcock@cw.com.

## Inside Lines

### Alliances abounding

Today's systems management market is a volatile brew of shifting alliances, particularly between vendors of enterprise management platforms and vendors of PC LAN management applications. One recent partnership in this arena pairs Tivoli Systems with Intel (see story, page 15), while another grouping involves IBM, SunSoft and Apple. Last week, sources said Novadigm, a purveyor of enterprise application development and deployment software, is considering a partnership with Microsoft to link its popular Enterprise Desktop Manager application with Microsoft's desktop PC management application, Systems Management Server. Novadigm declined to comment on any new friends it may be making in Redmond, Wash.

### 'Tis the season

The surest signs of autumn: crisp October mornings, the crackling of leaves underfoot and major IBM product announcements. Next week, Big Blue will detail a comprehensive server strategy that will enable its PC servers, RS/6000s, AS/400s and S/390 machines to interoperate more effectively with one another. SAP will also make it official that its R/3 client/server software is indeed being ported to run on System/390 mainframes.

### Phantom machines

The eleventh-hour design flaw discovered in Intel's upcoming 120-MHz Pentium chip for portables [CW, Sept. 11] delayed some high-end notebook announcements. But Toshiba America Information Systems was unable to stop the advertisements already in the works by computer resellers in the monthly computer publications. So, because of these ads, Toshiba will soon be selling the Tecra 700 series, which includes a 120-MHz chip, 11.3-in. active-matrix color monitor, PCMCIA slots for two Type II cards or one Type III card and a lithium ion battery. The machine will weigh 7.3 pounds. Pricing wasn't yet available. Toshiba won't officially announce the machines until later this month.

### IBM's view broadening

IBM is working on a performance management tool to help administrators of client/server networks examine critical applications. Late this year or early next, IBM will build on the NetView network manager and add to the SystemView suite of integrated management programs. Users will be able to log the performance of applications over a network from the start of a client request through server response.

### Friendly competitors?

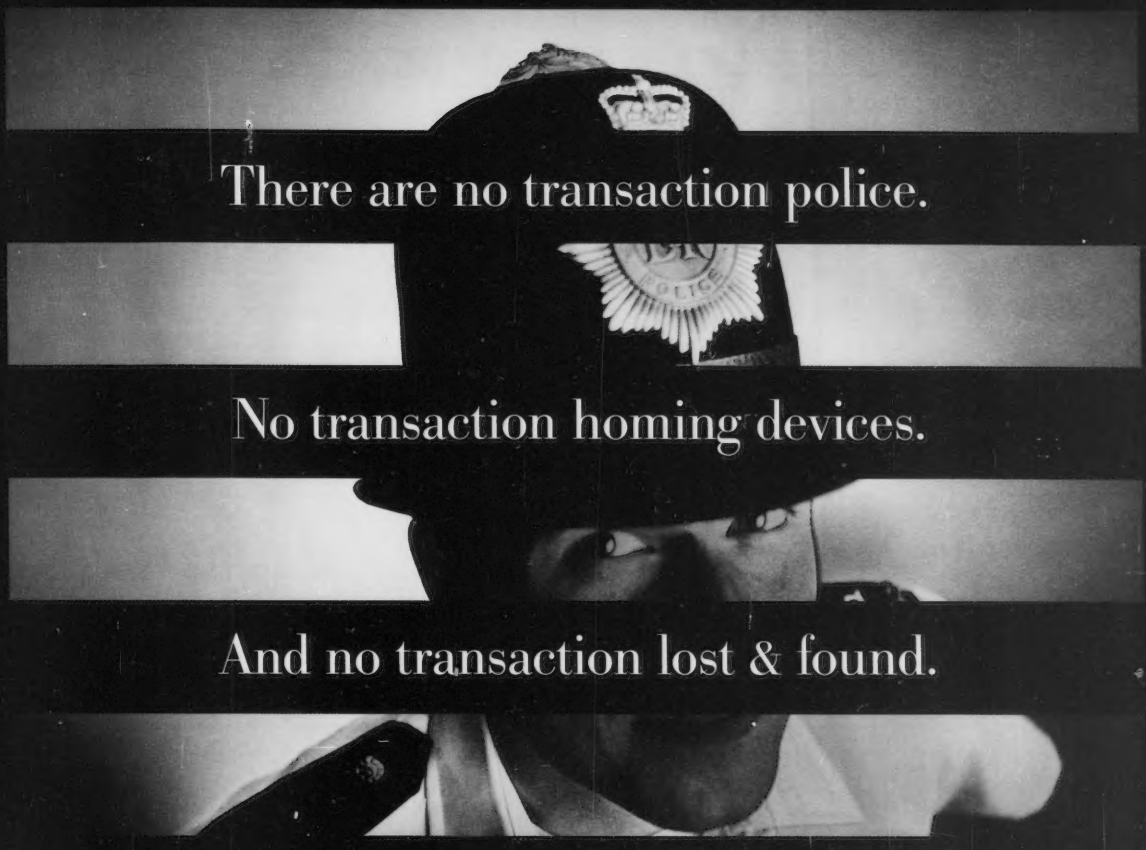
Maybe there is something to the much-hyped spirit of detente between Microsoft and Novell after all. Right there at the Networld/Interop '95 trade show last week was Mike Nash, group product manager for Windows NT Server at Microsoft, and Willy Donahoo, director of NetWare product marketing at Novell, sitting down for a civilized and — dare we say it — friendly breakfast together. It was the first-ever meeting between the two rivals, who were overheard debating the merits of their respective network operating systems. Donahoo opened with "Where's Cairo?" Nash retorted with, "How come your application NLMs cost 10 times more than our SQL database server?"

*Pope John Paul II is due to hit town this week for a five-day tour of New York, New Jersey and Maryland. But if you can't get to those hot spots, thou shalt not want. You can visit http://www.nj.com/popepage, a new Web site dedicated to the Catholic leader. At The Pope Page, you can check out coverage of his holy activities, including "blessing bytes" from Masses planned along the way in New York and New Jersey football stadiums. And while you're on-line, drop a line to* Computerworld *news editor Maryfran Johnson at maryfran_johnson@cw.com, or tap into our 24-hour voice-mail tip line at (508) 820-8555 or our toll-free number at (800) 343-6474.*

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- 10.4" Active Matrix Color Display
- 8MB RAM (20MB Max RAM)
- 420MB Upgradeable HDD
- 128KB External L2 Cache
- 3 Year Warranty

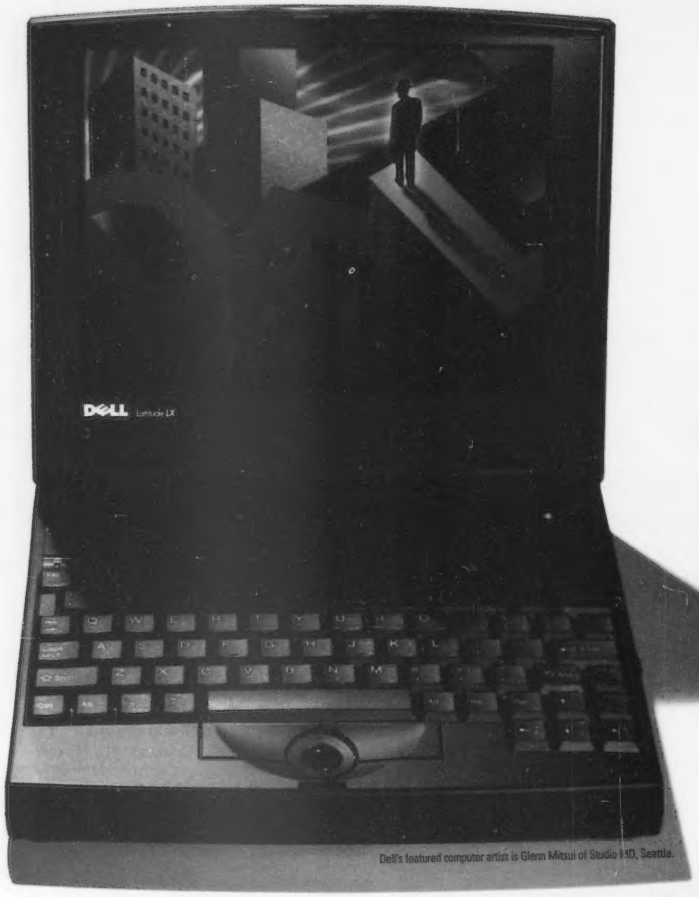
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- 10.4" Active Matrix Color Display
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Dell's featured computer artist is Glenn Mitsui of Studio 410, Seattle.

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[4]In Cross-Country™ tests conducted by VeriTest, inc., a leading independent test lab, the Dell Latitude LX 4100D lasted 3 hours 39 minutes with one battery, 7 hours 36 minutes with two batteries. That's LA to New York, no problem. The VeriTest Cross-Country v2.0 test simulates typical executive use of Microsoft Office® applications in Microsoft Windows® v3.11 during an airplane flight. Power management was enabled and 8MB of RAM was installed. VeriTest, inc. is located in Santa Monica, CA. [1]For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P., 2214 W. Braker Lane, Building 3, Austin, TX 78758. Prices and specifications valid in the U.S. only and subject to change without notice. Microsoft, Windows and the Windows logo are registered trademarks of Microsoft Corporation. The Intel Inside logo is a registered trademark and IntelDX4 is a trademark of Intel Corporation. ©1995 Dell Computer Corporation. All rights reserved.